

Missouri Department of Transportation and Highway Patrol Employees' Retirement System

A Component Unit of the State of Missouri

2015

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MoDOT and Patrol Employees' Retirement System



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Notes

Creation of the System

In 1955, Senate Bill 66 was enacted, and the Highways and Transportation Employees' and Highway Patrol Retirement System (HTEHPRS) was established, providing disability and retirement benefits for the employees of the Missouri Department of Transportation and the Missouri State Highway Patrol. One month later, MPERS accepted 109 retirements...and so our journey began.

The establishment of MPERS was a collaborative effort of employees from the State Highways Commission, the Missouri State Highway Patrol and the Highway Employees' Association, who negotiated an arrangement with the State Highways Commission to forego a future employee raise in order to fund the first contributions of the retirement system.

Through the passage of House Bill 1440 in 2004, the system was renamed the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS).

Important System Events

| September 1, 1955 | Highways and Transportation Employees' and Highway Patrol Retirement System (HTEHPRS) was created through the passage of Senate Bill 66. In 2004, the System was renamed the MoDOT and Highway Patrol Employees' Retirement System (MPERS). |
|-------------------|---|
| October 1, 1955 | System accepted 109 retirements. The System started with \$0 start-up funding - only the monthly contributions. No contributions were paid on the service earned prior to the creation of MPERS; however, benefits were calculated and paid using that service. |
| August 13, 1988 | First Executive Director hired. |
| July 1, 2000 | The Year 2000 Plan became effective. |
| August 9, 2002 | MPERS moved to its current location at 1913 William Street. |
| January 1, 2011 | The 2011 Tier of the Year 2000 Plan became effective (result of pension reform legislation). |



Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Missouri Department of Transportation and Highway Patrol Employees'

Retirement System

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2014

Executive Director/CEO

Public Pension Coordinating Council Award



Public Pension Coordinating Council

Public Pension Standards Award For Funding and Administration 2015

Presented to

MoDOT and Patrol Employees' Retirement System

In recognition of meeting professional standards for plan funding and administration as set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA) National Conference on Public Employee Retirement Systems (NCPERS) National Council on Teacher Retirement (NCTR)

> Alan H. Winkle Program Administrator



MoDOT & Patrol Employees' Retirement System

Scott L. Simon Executive Director

Pam Henry Asst. Executive Director

November 10, 2015

To the Board of Trustees and System Members:

We are pleased to provide this Comprehensive Annual Financial Report (CAFR), of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS), for the fiscal year ended June 30, 2015. This report is intended to provide MPERS' stakeholders with a thorough review of the System's operations for the past fiscal year. The material presented in this report has been prepared in a manner intended to be useful and informative to MPERS' members, the management of the Missouri Department of Transportation (MoDOT), the Missouri State Highway Patrol (MSHP), and the elected officials of the state of Missouri.

MPERS is a traditional defined benefit pension plan providing lifetime retirement benefits to eligible MoDOT and Highway Patrol employees. The monthly retirement and survivor benefits provided by MPERS are a valuable source of retirement income for the members we serve. These benefits, when combined with social security, provide the basic foundation for our members to retire with dignity.

The average monthly benefit of a new MPERS retiree is \$2,044, which equates to \$24,528 per year. Given the increasing cost of living, this amount alone will not provide a life of luxury for the retiree. However, this monthly benefit and those provided by other traditional pension plans have a significant impact that reaches beyond the retirees served. Over the past 10 years alone, MPERS has paid over \$2 billion in benefit payments to its members. Most of these members, retirees and beneficiaries reside in Missouri, reinvesting their retirement dollars in housing, goods, and services. In turn, the local economies benefit from these expenditures, which help to fuel the economy. It is easy to see that defined benefit pensions have a long-term positive impact on our economy and the lives of our members.

Report Contents and Structure:

This CAFR is designed to comply with the statutory reporting requirements stipulated in Sections 104.190, 104.1006, and 105.661 of the Revised Statutes of Missouri (RSMo), as amended.

To the best of our knowledge and belief, the information presented is accurate in all material respects and is reported in a manner designed to fairly present the financial position of the fund. Some amounts included in the financial statements and elsewhere may be based on estimates and judgments. These estimates and judgments were products of the best business practices available. The accounting policies followed in preparing the basic financial statements conform with U.S. generally accepted accounting principles. Financial information presented throughout the CAFR is consistent with information displayed in the basic financial statements.

The MPERS Board of Trustees is ultimately responsible for the CAFR and the basic financial statements. MPERS' Executive Director and staff prepare the information contained in the CAFR and the financial statements to assist the Board in fulfilling their statutory duty.

Systems of internal controls and supporting procedures are maintained to provide assurances that transactions are authorized, assets are safeguarded, and proper records are maintained. These controls include standards in the hiring and training of employees, the establishment of an organizational structure, and the communication of policies and guidelines throughout the organization. Inherent limitations exist in all control systems. No evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud have been detected. The objective of internal controls is to provide reasonable assurance the financial statements are free of any material misstatements, recognizing that the cost of a control should not exceed the benefits to be derived.

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In accordance with Section 104.190, RSMo, as amended, an independent auditing firm, Williams-Keepers, LLC, has audited the financial statements included in this report and has issued an unqualified opinion (meaning no audit findings on MPERS' financial statements). Their opinion letter is presented in the Financial Section of this CAFR. Management's Discussion and Analysis (MD & A) immediately follows the Independent Auditors' Report and provides a narrative introduction, overview, and analysis of the basic financial statements. Management's Discussion and Analysis complements this letter of transmittal.

Background Information:

MPERS was established by Senate Bill 66. Under this legislation, employees of MoDOT and the Highway Patrol became members of the retirement system on September 1, 1955. Effective October 1, 1955, the System accepted 109 retirements.

The plan provisions have changed many times over the years. The System offers not only enhanced retirement and disability benefits, but also benefits for survivors of active and retired members, benefits for qualified terminated-vested members, and death benefits. Since January 1, 2011, new employees hired for the first time in a benefit eligible position are required to contribute 4% of pay to help fund the cost of their MPERS benefits.

An eleven-member Board of Trustees is responsible for the oversight of MPERS. The Trustees serve as fiduciaries to the members and are responsible for selecting and retaining competent management. The Trustees and management jointly establish sound policies and objectives, and monitor operations for compliance and oversee performance.

As an instrumentality of the state, MPERS is considered a component unit of the state of Missouri for financial reporting purposes and, as such, the financial statements in this report are also included in the State of Missouri's Comprehensive Annual Financial Report.

Fiscal Year 2015 Highlights:

MPERS celebrated two important milestones in 2015. September marked the 60th Anniversary of the System. As mentioned above, MPERS was created through the passage of SB 66, which became effective September 1, 1955. In May 2015, MPERS attained \$2 billion in assets. Through sound practices and professional management, the fund continues to grow and produce notable investment returns.

MPERS has multiple sources available for communicating the benefit provisions to its members. This year, five videos were created and posted to the MPERS website. The videos cover basic benefit information including the different retirement plans, service credit, applying for retirement, and disability benefits.

As a result of the information technology architectural audit conducted by Brown Smith Wallace, LLC in 2013, staff took steps to enhance the privacy of member information and retained a source of professional technology guidance. Since MPERS does not employ internal IT staff, we contracted with Huber and Associates to maintain our technology, provide vulnerability testing, and proactively offer professional technology consulting. In addition, MPERS created an internal IT security team to work with Huber and Associates and the pension administration system provider (Levi, Ray and Shoup) to further enhance the security of member records.

In September 2014, the Board adopted a contribution stabilization fund from experience gains in an effort to keep the employer contribution rate at or near 58%, in the near term. In February 2015, the Board established a maximum of \$250 million in the stabilization reserve account. The contribution rate stabilization reserve is expected to result in the fund becoming more than 100% funded by the end of the amortization period, if experience is exactly as assumed.

The Governmental Accounting Standards Board (GASB) sets forth the standards for state and local governmental accounting and financial reporting. GASB revised those standards through the passage of GASB Statements 67 and 68. These statements change how governments calculate and report the costs and obligations associated with pensions. They are designed to improve the decision-usefulness of reported pension information and to increase the transparency, consistency, and comparability of pension information across the state and local governments.

Statement 67, Financial Reporting for Pension Plans, applies to pension plans that administer pension benefits. This new reporting standard became effective and was implemented by MPERS in the fiscal year ending June 30, 2014. This statement builds upon the existing framework for financial reports, which includes a statement of fiduciary net position (the amount held in a trust for paying retirement benefits) and a statement of changes in fiduciary net position.

Statement 68, Accounting and Financial Reporting for Pensions, applies to the employers that provide pension benefits to their employees. This statement requires employers to recognize their long-term obligation for pension benefits as a liability for the first time, and to more comprehensively and comparably measure the annual costs of pension benefits. This new reporting became effective and was implemented by MoDOT and Patrol in the fiscal year ending June 30, 2015.

Actuarial Funding Status:

The funding objective of MPERS is to meet future benefit obligations of retirees and beneficiaries through investment earnings and contributions that remain approximately level as a percent of member payroll. Historical information relating to this objective is presented in the Schedule of Funding Progress in the Actuarial Section of this report. During the year ended June 30, 2015, the funded ratio of MPERS, which covers 18,294 participants, increased from 49.2% to 52.9%, primarily the result of favorable investment market experience in previous years and gains in demographic experience.

Each year an independent actuarial firm conducts a valuation to determine the actuarial soundness of the Plan, based on its long-term obligations and the sufficiency of current contribution levels to fund the liabilities over a reasonable time frame. In our most recent valuation, dated June 30, 2015, our actuary concluded that the System continues to be financed in accordance with actuarial principles of level percent of payroll financing. This statement is based upon the fact that the employers are contributing to the System based upon actuarially determined rates and presumes a continuation of payment of actuarially determined contributions. Additional information regarding the financial condition of the System can be found in the Actuarial Section of this report.

In an effort to address the System's underfunding situation, in September 2006, the Board of Trustees adopted a permanent funding policy that was intended to improve MPERS' funded status over time.

The permanent funding policy provided:

 The total contribution is based on the Plan's normal cost plus a 29-year amortization period for MPERS' unfunded actuarial accrued liabilities. The financing period is a closed period starting July 1, 2007.

On September 17, 2009, after the market downturn, the Board of Trustees adopted the following temporary accelerated funding policy:

- The total contribution is based on the Plan's normal cost plus a 15-year amortization period for unfunded retiree liabilities and a 30-year amortization period for other unfunded liabilities. Both amortization periods are closed periods starting July 1, 2010.
- The temporary accelerated funding policy will remain in effect until such time as the retiree liability becomes 100% funded or the permanent funding policy produces a higher contribution rate.

As of June 30, 2015, the permanent funding policy is at a closed amortization period of 20 years and the temporary accelerated funding policy is at a closed amortization period of 9 years for unfunded retiree liabilities and 24 years for other unfunded liabilities.

Investment Activities:

State statutes require the System to make investments using the same care, skill, and diligence that a prudent person acting in a similar capacity would use. In fulfilling this obligation, the Board of Trustees has established a formal investment policy to clearly define the roles and responsibilities of the Board, staff and consultants, and to ensure that System assets are invested in a diversified portfolio following prudent investment standards. The Board of Trustees determines the broad asset allocation policies and return objectives of the Plan. To implement and execute these policies, the Board retains investment staff, consultants, a master custodian and other advisors.

As of June 30, 2015, MPERS' investment portfolio had a total market value of \$2.004 billion, representing a return of 6.62% for the fiscal year. The portfolio continues to perform very well versus the peer universe. Relative to our peer group, the 6.62% return for FY2015 ranked MPERS in the 1st percentile, outpacing 99% of other public funds within the universe. The trailing three-year performance of 12.45% ranks MPERS in the top 3% of the peer universe. The trailing ten-year performance of 7.20% ranks MPERS in the top 6% of the universe.

Awards:

The Government Finance Officer Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to MPERS for its FY2014 CAFR. This was the tenth consecutive year that MPERS has achieved this prestigious award. The Certificate of Achievement is the highest form of recognition for excellence in state and local government financial reporting. To be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized CAFR. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year. We believe that our current CAFR continues to meet the program's requirements, and therefore, we are submitting this report to GFOA to determine its eligibility for another certificate.

MPERS also received the Public Pension Coordinating Council (PPCC), Public Pension Standards Award, in recognition of meeting professional standards for plan design and administration. This is the eleventh consecutive year MPERS received the council's award. This award is presented by the PPCC, a confederation of the National Association of State Retirement Administrators (NASRA), the National Conference on Public Employee Retirement Systems (NCPERS) and the National Council on Teacher Retirement (NCTR).

Acknowledgements and Distribution:

This report, prepared by the MPERS' Executive Director and staff, is intended to provide comprehensive and reliable information about the System, to demonstrate compliance with legal provisions, and to allow for the evaluation of responsible stewardship of the System's funds.

Copies of this report are provided to the Governor, the State Auditor, and the Joint Committee on Public Employee Retirement. It is also distributed to all MoDOT divisions, district offices, Highway Patrol general headquarters, and troop headquarters. These offices form the link between MPERS and its members, and their cooperation contributes significantly to the success of MPERS. We hope all readers of this report find it informative and useful. Additional copies will be furnished upon request. An electronic version of this report is available on the MPERS' website at www.mpers.org.

We express our gratitude to the members of the Board, the staff, the consultants, and the many people who have worked so diligently to assure the continued successful operation of MPERS. The steady, monthly benefit payments offered by defined benefit plans, like MPERS, provide peace of mind and security for retirees and their families. For 60 years, MPERS has been committed to providing a foundation for financial security to plan participants through the delivery of quality benefits, exceptional member service, and professional plan administration.

Respectfully submitted,

Scott Simon

Executive Director

Lloyd J. Carmichael Board Chairman

Board of Trustees

MPERS is governed by a Board of Trustees. As set out in Section 104.160 of the Revised Statutes of Missouri (RSMo), the Board is comprised of eleven members:



Lloyd "Joe" Carmichael

Board Chair

Commission Member

Highways & Transportation

Commissioner

Term Expires 3-1-2015



Colonel J. Bret Johnson

Board Vice Chair

Superintendent of the

Missouri State Highway Patrol

Ex-Officio Member



Roberta Broeker
Interim Director of the
Missouri Department
of Transportation
Ex-Officio Member



MoDOT Retiree Representative Elected by Retired Members of MoDOT Term Expires 7-1-2018



Michael B. Pace
Commission Member
Highways & Transportation
Commissioner
Term Expires 7-1-2019



Representative
Shawn Rhoads
State Representative
District 154
Appointed by the
Speaker of the House



Senator Dave Schatz
State Senator
District 26
Appointed by
President Pro-Tem

of the Senate



William "Bill" Seibert
MSHP Retiree Representative
Elected by Retired
Members of MSHP
Term Expires 7-1-2018



Major Kemp Shoun

MSHP Employees'

Representative

Elected by MSHP Employees

Term Expires 7-1-2018



Todd Tyler MoDOT Employees' Representative

Elected by MoDOT Employees Term Expires 7-1-2018 Vacant



Vacant
Commission Member
Highways & Transportation
Commissioner

Administrative Organization

Executive Team



Front Row: Larry Krummen-Chief Investment Officer, Scott Simon-Executive Director

Back Row: Jennifer Even-Chief Financial Officer, Greta Bassett-Seymour-General Counsel,

Pam Henry-Assistant Executive Director

Our Mission is to provide a foundation for financial security to plan participants by delivering quality benefits and exceptional member service through professional plan administration and prudent management of assets, at a reasonable cost to the taxpayers of Missouri.

Administrative Organization

Director's Office

The Director's Office staff provides administrative oversight and support in the areas of legislation, operations, benefits, and investments.

Financial Services

The Financial Services section is responsible for maintaining all the financial records of MPERS. The chief financial officer (accountant) interacts with the investment custodian, the auditors, the depository bank, Missouri's Department of Revenue, and the Internal Revenue Service. In addition, the accountant assists the chief investment officer in tracking and predicting target cash balances, participates in annual budget development, prepares monthly budget-to-actual reports, and calculates monthly premium payments to the long-term disability insurer. The accountant also processes MPERS' semi-monthly office payrolls, reconciles monthly benefit payments and contributions/payrolls posted, and reconciles investment activity.

Investments

The Investments section staff works closely with the general investment consultant to oversee the investment portfolio and provide consulting services to the Board and the executive director. This includes, but is not limited to: (a) formulating investment policy and asset recommendations, (b) providing recommendations on the selection, (c) monitoring and evaluating external investment advisors, (d) measuring and reporting on investment performance, (e) conducting market research on political, financial, and economic developments that may affect the System, and (f) serving as a liaison to the investment community.

Legal Services

The Legal Services section advises the executive director and Board on legal matters, reviews and approves investment and other contracts for MPERS, advises staff on the application of state and federal statutes affecting the administration of plan benefits, responds to requests from members and their attorneys related to plan benefits, engages in or oversees litigation affecting MPERS, and assists in developing policies, rules, and legislation impacting MPERS' operations and the administration of plan benefits.

Member Services

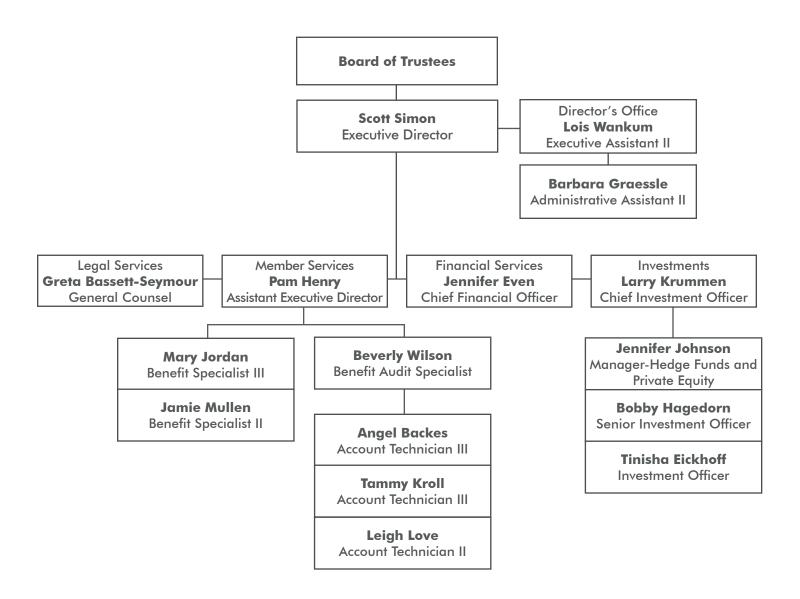
The Member Services section consists of two units devoted to serving member needs.

The Benefits Unit is responsible for contact with the membership regarding the benefit programs administered by MPERS, which include retirement and disability. The benefit staff is responsible for preparing and delivering the pre-retirement and benefit basics seminars in addition to assisting with the development of member communication material.

The Payroll Unit is responsible for establishing and maintaining all membership records including: (a) maintaining member data on the pension administration system, (b) verifying retirement calculations, (c) balancing payroll deductions, (d) verifying SAM II data against exception reports, and (e) entering payroll, service, and leave data into the System's computerized database.

Administrative Organization

The executive director of MPERS has charge of the offices and records of the System and hires such employees deemed necessary, subject to the approval of the Board of Trustees. The System employs sixteen full-time staff.



Professional Services

The following firms were retained at fiscal year-end by the Board of Trustees to serve in professional capacities or provide consultant services. Please refer to pages 45 and 46 in the Investment Section for the Schedule of Investment Expenses and Brokerage Commissions for the investment professionals.

Actuary

Gabriel, Roeder, Smith & Company Southfield, Michigan

Auditor

Williams-Keepers, LLC Jefferson City, Missouri

Investment Consultant

New England Pension Consultants (NEPC) Cambridge, Massachusetts

Information Technology

Levi, Ray & Shoup, Inc. Springfield, Illinois

Huber & Associates Jefferson City, Missouri

Legislative Consultant

Michael G. Winter Consultants, LLC Jefferson City, Missouri

Master Trustee/Custodian

The Northern Trust Company Chicago, Illinois

Risk Management/Insurance Consultan

Charlesworth Benefits Overland Park, Kansas

Long-Term Disability Insurer

The Standard Insurance Company Portland, Oregon

Professional Services

Investment Managers

| Aberdeen Asset Management | |
|--|----------------------------|
| ABRY Partners | |
| Achievement Fund | |
| Acadian Asset Management | |
| AEW Partners | |
| Albourne America | |
| American Infrastructure MLP | |
| Anchorage Capital Group | |
| Apollo Real Estate | |
| AQR Capital Management | |
| Ares Management | |
| Audax Group | Boston Massachusetts |
| Barclays Global Investors | San Francisco, California |
| Bernzott | |
| BlueCrest Capital Management | |
| Brevan Howard | |
| Bridgewater Associates | Westport, Connecticut |
| BTG Pactual | |
| Capital Partners | |
| CarVal Investors (CVI) | |
| CBRE Investors | |
| Cevian Capital Limited | |
| CenterSquare Investment Management (formally Urdang) | |
| Clarion Partners | |
| Colony Capital | Los Angeles, California |
| Deephaven Capital Management | Minnetonka, Minnesota |
| EIF Management | |
| Energy & Mineral Group | Palm Pageb Gardons Florida |
| GMO | |
| Golden Sciens Marine Investments | |
| Golub Capital | |
| Grove Street Advisors | |
| Gryphon | San Francisco, California |
| GSO Capital Partners | |
| Kennedy Capital | |
| Koppenberg | New York, New York |
| KPS | New York, New York |
| Luxor Capital | |
| M&G Investments | |
| Metacapital Management | New York, New York |
| Natural Gas Partners | |
| Ned Davis | |
| Northern Shipping | |
| Och-Ziff Real Estate | |
| OCP Asia | |
| Orion Mine Finance Group Ospraie Management | |
| Parametrics Parametrics | |
| Partner Fund Management | |
| Pinnacle Associates | • |
| Principal Global Investors | • |
| RK Capital Management | |
| Ridgewood Energy | |
| Shore Capital Partners | |
| Shoreline Capital | Guangzhou, China |
| Silchester International Investors Limited. | New York, New York |
| Stark Investments (Shepherd) | |
| Stelliam Investment Management | New York, New York |
| Taconic Capital Advisors | |
| The Northern Trust Company | |
| Torchlight Investors | |
| Tortoise Capital Advisors | |
| Tristan Capital Partners | |
| ValueAct Capital | • |
| Vectis Healthcare | boston, Massachusetts |

Notes

History of Leadership

For the first 35 years, MPERS was operated as a unit of the State Highways Commission, with MoDOT staff assigned part-time to carry out the System's business. In 1988, the first executive director position was established. As the membership base and the assets of the System grew, it became clear that full-time staff would be required to provide continuity and direction to improve and advance the System. In June 2002, a building was purchased at 1913 William Street in Jefferson City to provide a permanent home for the System.

| Executive Director | <u>Dates Served</u> |
|--------------------|-----------------------|
| Terry Porterfield | 8/13/1988 - 6/30/1991 |
| David DeWitt | 7/1/1991 - 12/31/1993 |
| Norm Robinson | 2/10/1994 - 6/30/2008 |
| Susie Dahl | 7/1/2008 - 8/31/2012 |
| Scott Simon | 9/1/2012 - present |

Important Staff Events

| September 1, 1955 | Operated as a unit of the State Highway and Transportation Department. Highway staff were assigned on a part-time basis to carry out the System's business. |
|--------------------|---|
| August 13, 1988 | First Executive Director position was established to administer the System in lieu of the Highway and Transportation Commission Secretary. |
| October 1, 2001 | Transferred 5 full-time employees from MoDOT payroll to MPERS payroll. |
| November 28, 2001 | Hired the first Assistant Executive Director. |
| December 1, 2003 | Hired the first Chief Investment Officer (CIO). |
| January 1, 2005 | Hired the first General Counsel. |
| February 1, 2006 | Hired the first Senior Financial Officer. |
| September 27, 2007 | Hired the first Senior Investment Officer. |

Independent Auditors' Report



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3220 West Edgewood, Ste. E, Jefferson City, MO 65109 OFFICE (573) 635-6196 FAX (573) 644-7240

www.williamskeepers.com

INDEPENDENT AUDITORS' REPORT

The Board of Trustees Missouri Department of Transportation and Highway Patrol Employees' Retirement System

Report on the Financial Statements

We have audited the accompanying statements of fiduciary net position of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System), as of June 30, 2015 and 2014, and the related statements of changes in fiduciary net position for the years then ended, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with U.S. generally accepted auditing standards. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the System's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the System at June 30, 2015 and 2014, and the changes in fiduciary net position for the years then ended, in conformity with U.S. generally accepted accounting principles.

American Institute of Certified Public Accountants Missouri Society of Certified Public Accountants PKF North American Network

Superior service. Creative solutions. Exceptional clients.

Independent Auditors' Report

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis on pages 3 through 7 and the schedules of employers' net pension liability, changes in the employers' net pension liability, employers' contributions, investment returns, OPEB funding progress, and related notes on pages 26 through 29 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context.

We have applied certain limited procedures to the required supplementary information in accordance with U.S. generally accepted auditing standards, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audits were conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's financial statements as a whole. The introductory, investment, actuarial and statistical sections and the additional information presented on pages 30 through 32 are presented for purposes of additional analysis and are not a required part of the financial statements.

The additional information presented on pages 30 through 32 is the responsibility of management and was derived from and relate directly to the underlying accounting and other records used to prepare the financial statements. The additional information presented on pages 30 through 32 has been subjected to the auditing procedures applied in the audits of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with U.S. generally accepted auditing standards. In our opinion, the additional information presented on pages 30 through 32 is fairly stated in all material respects in relation to the basic financial statements as a whole.

The introductory, investment, actuarial and statistical sections have not been subjected to the auditing procedures applied in the audits of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

November 10, 2015

Williams - Keepers LLC

The management of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System, or MPERS) provides this discussion and analysis of the System's financial performance for the fiscal years ended June 30, 2015 and 2014. While this discussion is intended to summarize the financial status of MPERS, readers should consider this information in conjunction with the information that is furnished in the more detailed financial statements and corresponding notes.

DESCRIPTION OF BASIC FINANCIAL STATEMENTS

As required by the Governmental Accounting Standards Board (GASB) accounting standards, this financial report consists of Management's Discussion and Analysis (this section), the basic financial statements (including notes to the basic financial statements), and other required supplementary information.

<u>Financial Statements</u> report information about MPERS, using accounting methods similar to those used by private-sector companies, by using the economic resources measurement focus and accrual basis of accounting. These statements provide both long-term and short-term information about the System's overall financial status. These statements follow this Management's Discussion and Analysis section:

- The <u>Statement of Fiduciary Net Position</u> includes all the System's assets and liabilities, with the difference between the two reported as net position.
- The <u>Statement of Changes in Fiduciary Net Position</u> accounts for all the current year's additions (income) and deductions (expenses), regardless of when cash is received or paid.

Notes to the Financial Statements includes all the System's assets and liabilities, with the difference between the two reported as net position.

<u>Required Supplementary Information</u> follows the notes and further supports the information in the financial statements.

ANALYSIS OF FINANCIAL POSITION AND RESULTS OF OPERATIONS

Overall, the financial position of MPERS improved by \$52 million, reported as the "net increase." This is primarily a result of net appreciation in the fair value of investments for the year ended June 30, 2015. With this net increase in value in FY15, the funded status of the plan showed an increase of 3.76%.

The following schedules present summarized comparative data from the System's financial statements for each of the fiscal years ended June 30, 2015, 2014, and 2013. Following each schedule is a brief summary providing explanation and analyses of the major reasons for changes in the condensed financial statements.

Summarized Comparative Statements of Fiduciary Net Position

| | As of June 30, 2015 | As of June 30, 2014 | As of June 30, 2013 | % Change 2015/2014 | % Change 2014/2013 |
|---------------------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|
| Cash and Receivables | \$ 23,606,579 | \$ 15,256,813 | \$ 39,152,820 | 55 | -61 |
| Investments Invested Securities | 1,991,396,397 | 1,937,710,335 | 1,651,622,264 | 3 | 17 |
| Lending Collateral | 80,780,418 | 86,192,337 | 92,327,975 | -6 | -7 |
| Capital Assets | 1,921,467 | 2,283,961 | 2,627,203 | -16 | -13 |
| Other Assets | 6,366 | 5,899 | 69,961 | 8 | -92 |
| Total Assets | 2,097,711,227 | 2,041,449,345 | 1,785,800,223 | 3 | 14 |
| Accounts Payable | 3,994,860 | 7,784,728 | 5,298,016 | -49 | 47 |
| OPEB Obligation | 643,809 | 599,399 | 554,370 | 7 | 8 |
| Securities Lending Collateral | 83,705,424 | 75,609,005 | 94,215,127 | 11 | -20 |
| Total Liabilities | 88,344,093 | 83,993,132 | 100,067,513 | 5 | -16 |
| Net Position | \$2,009,367,134 | \$1,957,456,213 | \$1,685,732,710 | 3 | 16 |

The increase in cash and receivables is primarily attributable to higher investment sales receivables as of June 30, 2015. Some fluctuations in this area are normal, based on investment activity. The decrease from FY13 to FY14 is primarily attributable to lower investment sales receivables which were normal fluctuations based on investment activity.

The System's investments represent the main component of total assets. These investments include holdings of stock, government-sponsored enterprises, bonds, mortgages, real estate, timber, hedge funds, securities lending collateral, limited partnerships, and other fixed income investments. The increase in fair value of investments as of June 30, 2015 is due to favorable market conditions experienced during FY15. The FY15 investment return was 6.62%. The increase in fair value from FY13 to FY14 is due to higher than expected investment returns of 17.59%.

Capital assets decreased in FY15 and FY14 due to depreciation of existing assets and only minimal purchases of new equipment during the year.

The largest component of liabilities is securities lending collateral. This represents the amount owed for collateral to be returned as the result of securities lent. The increase in securities lending collateral liability from FY14 to FY15 is due to the increase in the fair value of investments and changes in securities lending provider policies. The decrease in securities lending collateral liability from FY13 to FY14 is due to fewer securities being utilized for lending. The corresponding securities lending collateral asset is valued at a lower amount at June 30, 2015 due to the market value of the securities on loan being less than the par value. The corresponding securities lending collateral asset is valued at a higher amount at June 30, 2013 due to the market value of the securities on loan being more than par value.

The decrease in accounts payable for FY15 is primarily attributable to lower investment purchases payable and the increase in accounts payable for FY14 is primarily attributable to higher investment purchases payable. Some fluctuations in this area are normal, based on investment activity.

The OPEB obligation liability of \$643,809 at June 30, 2015, \$599,399 at June 30, 2014, and \$554,370 at June 30, 2013 reflects the System's provision of post-employment health care benefits through its participation in the MoDOT and MSHP Medical and Life Insurance Plan. This plan is an internal service fund of the Missouri Department of Transportation (MoDOT); therefore, assets have not been set aside. With this, the increases from FY14 to FY15 and from FY13 to FY14 are expected.

The System's total net position was \$2.009 billion at June 30, 2015, a \$52 million increase from the \$1.957 billion at June 30, 2014. This is in addition to an increase of the previous year, when net position increased \$272 million from the June 30, 2013 amount of \$1.685 billion to the June 30, 2014 amount of \$1.957 billion.

Summarized Comparative Statements of Changes in Fiduciary Net Position

| | Year Ended June 30, 2015 | Year Ended June 30, 2014 | Year Ended June 30, 2013 | % Change 2015/2014 | % Change 2014/2013 |
|----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------|-----------------------|
| Contributions | \$ 205,047,170 | \$ 187,398,786 | \$ 173,703,401 | 9 | 8 |
| Net Investment Income | 92,645,423 | 319,445,655 | 198,139,438 | -71 | 61 |
| Other Income | 148 | 125 | 1,650 | 18 | -92 |
| Net Additions | 297,692,741 | 506,844,566 | 371,844,489 | -41 | 36 |
| Benefits | 241,714,876 | 231,384,708 | 224,518,100 | 4 | 3 |
| Administrative Expenses | 4,066,944 | 3,736,355 | 2,997,225 | 9 | 25 |
| Total Deductions | 245,781,820 | 235,121,063 | 227,515,325 | 5 | 3 |
| Net Increase | 51,910,921 | 271,723,503 | 144,329,164 | -81 | 88 |
| Net Position-Beginning | 1,957,456,213 | 1,685,732,710 | 1,541,403,546 | 16 | 9 |
| Net Position-Ending | \$2,009,367,134 | \$1,957,456,213 | \$1,685,732,710 | 3 | 16 |

The main component of the changes in contributions to MPERS is employer contributions. In FY15 the contribution rate for the non-uniformed Highway Patrol and MoDOT increased by 4.51% and the contribution rate for the uniformed Highway Patrol increased by 2.96% from the FY14 rates, therefore increasing the FY15 amount of employer contributions. In FY14 the contribution rate for the non-uniformed Highway Patrol and MoDOT increased by 3.33% and the contribution rate for the uniformed Highway Patrol increased by 0.20% from the FY13 rates, therefore increasing the FY14 amount of employer contributions.

Net investment income, a primary component of plan additions, resulted in income of over \$92 million for FY15. The income represented a 6.62% return for the fiscal year ended June 30, 2015. In comparison, the FY14 gain of over \$319 million represented an investment return of 17.59%. Annual fluctuations within the broad investment markets are outside of the control of the System and are expected to fluctuate from year to year. The Board of Trustees has approved a diversified asset allocation that, over time, is expected to realize the assumed actuarial rate of investment return of 7.75%.

Administrative expenses increased in FY15 due to adding investment staff and moving to an outsourced hosted IT solution.

Benefits increased primarily due to increases in benefit rolls for all of the years shown.

CURRENTLY KNOWN FACTS AND RECENT EVENTS

Based on the June 30, 2014 actuarial valuation, the Board of Trustees approved a slight decrease in the required state contribution, effective July 1, 2015. The rate applied to non-uniformed payroll (MoDOT, civilian patrol, and MPERS) will decrease from 58.76% to 58.05%. The rate applied to uniformed patrol payroll will decrease from 58.19% to 57.76%. The decrease in both rates is primarily due to positive investment returns.

Based on the June 30, 2015 actuarial valuation, the Board of Trustees approved a change in the required state contribution rate, effective July 1, 2016. The rate applied to non-uniformed payroll (MoDOT, civilian patrol, and MPERS) will decrease slightly from 58.05% to 58.00%. The rate applied to uniformed patrol payroll will increase from 57.76% to 58.00%. The decrease in the non-uniformed rate is primarily due to positive investment returns. The increase in the uniformed rate is primarily due to liability experience losses.

In June 2012, the Governmental Accounting Standards Board (GASB) approved new accounting and reporting standards for pensions provided by state and local governments. The new statements are GASB 67, Financial Reporting for Pension Plans and GASB 68, Accounting and Financial Reporting for Pensions. GASB 67 applies to MPERS and other state and local pension plans established as trusts, implemented in fiscal years beginning after June 15, 2013. GASB 68 applies to the employers that participate in MPERS as well as other governmental employers that sponsor or contribute to pension plans, implemented in fiscal years beginning after June 15, 2014. The new accounting and reporting standards break the link between accounting and funding. While these changes affect the accounting measures, they do not have an effect on the actuarial methods and assumptions used by MPERS to determine the employer contributions needed to fund the plan. The new standards, however, impact the financial statement presentation for pension accounting and related disclosures for MPERS and participating employers. MPERS implemented both GASB 67 and GASB 68 in FY14.

CONTACTING THE RETIREMENT SYSTEM'S MANAGEMENT

This financial report is designed to provide a general overview of the System's finances. Questions about this report or requests for additional financial information should be sent to:

MoDOT and Patrol Employees' Retirement System PO Box 1930 Jefferson City, MO 65102-1930 mpers@mpers.org

Statements of Fiduciary Net Position As of June 30, 2015 and 2014

| | 2015 | 2014 |
|--|-----------------|-----------------|
| ASSETS: | | |
| Cash | \$ 359,068 | \$ 194,136 |
| Receivables | | |
| Contributions | 8,392,952 | 7,705,671 |
| Accrued Interest and Income | 4,264,812 | 7,241,177 |
| Investment Sales | 10,567,358 | 97,323 |
| Other | 22,389 | 18,506 |
| Total Receivables | 23,247,511 | 15,062,677 |
| Investments, at Fair Value | | |
| Stocks and Rights/Warrants | 495,604,884 | 595,943,370 |
| Government Obligations | 187,018,431 | 145,598,291 |
| Corporate Bonds | 27,747,634 | 32,651,714 |
| Real Estate | 199,368,748 | 203,400,219 |
| Mortgages and Asset-Backed Securities | 210,369,202 | 176,678,785 |
| Hedge Funds (Absolute Return) | 235,475,642 | 204,257,912 |
| Short-Term Investments | 61,592,254 | 39,766,147 |
| Venture Capital & Partnerships | 574,219,602 | 539,413,897 |
| Total Investments | 1,991,396,397 | 1,937,710,335 |
| Invested Securities Lending Collateral | 80,780,418 | 86,192,337 |
| Prepaid Expenses | 6,366 | 5,899 |
| Net Investment in Capital Assets | | |
| Land | 84,000 | 84,000 |
| Building | 581,619 | 581,619 |
| Furniture, Equipment and Software | 3,508,918 | 3,506,428 |
| Accumulated Depreciation | (2,253,070) | (1,888,086) |
| Net Investment in Capital Assets | 1,921,467 | 2,283,961 |
| TOTAL ASSETS | \$2,097,711,227 | \$2,041,449,345 |
| LIABILITIES: | | |
| Accounts Payable | 1,702,210 | 1,554,399 |
| OPEB Obligation | 643,809 | 599,399 |
| Security Lending Collateral | 83,705,424 | 75,609,005 |
| Investment Purchases | 2,292,650 | 6,230,329 |
| TOTAL LIABILITIES | 88,344,093 | 83,993,132 |
| NET POSITION RESTRICTED FOR PENSIONS | \$2,009,367,134 | \$1,957,456,213 |
| Soo accompanying Notes to the Financial Statements | | |

See accompanying Notes to the Financial Statements.

Statements of Changes in Fiduciary Net Position For the Years Ended June 30, 2015 and 2014

| | 2015 | 2014 |
|---|-----------------|-----------------|
| ADDITIONS: | | |
| Contributions-Employer | \$ 200,638,571 | \$ 183,353,841 |
| Contributions-Employee | 2,086,000 | 1,282,379 |
| Contributions-Service Transfers from Other System | 1,114,437 | 1,784,382 |
| Contributions-Other | 1,208,162 | 978,184 |
| Total Contributions | 205,047,170 | 187,398,786 |
| Investment Income from Investing Activities | | |
| Net Appreciation in Fair Value of Investments | 59,440,132 | 296,466,951 |
| Interest and Dividends | 55,794,806 | 42,844,252 |
| Less: Investment Expenses | 22,797,145 | 20,130,262 |
| Net Investment Income | 92,437,793 | 319,180,941 |
| Income from Securities Lending Activities | | |
| Securities Lending Gross Income | 208,633 | 258,110 |
| Less: Securities Lending Expenses (Income), net | 1,003 | (6,604) |
| Net Income from Securities Lending Activities | 207,630 | 264,714 |
| Other Income | 148 | 125 |
| NET ADDITIONS | \$ 297,692,741 | \$ 506,844,566 |
| DEDUCTIONS: | | |
| Monthly Benefits | 241,714,876 | 231,384,708 |
| Administrative Expenses | 4,066,944 | 3,736,355 |
| TOTAL DEDUCTIONS | 245,781,820 | 235,121,063 |
| NET INCREASE | 51,910,921 | 271,723,503 |
| NET POSITION RESTRICTED FOR PENSIONS | | |
| Beginning of Year | 1,957,456,213 | 1,685,732,710 |
| End of Year | \$2,009,367,134 | \$1,957,456,213 |

See accompanying Notes to the Financial Statements.

For the Years Ended June 30, 2015 and 2014

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

As established under Section 104.020 of the Revised Statutes of Missouri (RSMo), the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS) is a body corporate and an instrumentality of the State of Missouri (State). Due to the nature of MPERS' reliance on funding from the Missouri Department of Transportation (MoDOT) and the Missouri State Highway Patrol (MSHP) and control of the overall plan document by the legislative and executive branches of state government, MPERS is considered a part of the State of Missouri financial reporting entity and is included in the State's financial reports as a component unit shown as a pension trust fund.

Note 1 (a) - Basis of Accounting

The financial statements were prepared using the accrual basis of accounting. Contributions are due to MPERS when employee services have been performed and paid. Contributions are recognized as revenues when due, pursuant to statutory requirements. Benefits are recognized when due and payable and expenses are recorded when the corresponding obligations are incurred. Dividend income is recognized when dividends are declared. Interest income is recognized when earned.

In June 2012, the Governmental Accounting Standards Board (GASB) approved new accounting and reporting standards for pensions provided by state and local governments. The new statements are GASB 67, Financial Reporting for Pension Plans and GASB 68, Accounting and Financial Reporting for Pensions. GASB 67 applies to MPERS and other state and local pension plans established as trusts, implemented in fiscal years beginning after June 15, 2013. GASB 68 applies to the employers that participate in MPERS as well as other governmental employers that sponsor or contribute to pension plans, implemented in fiscal years beginning after June 15, 2014. MPERS implemented both GASB 67 and GASB 68 in FY14.

The requirements for GASB 67 include changes in presentation of the financial statements, notes to the financial statements, and required supplementary information. Significant changes include an actuarial calculation of total and net pension liability. It also includes comprehensive footnote disclosure regarding the pension liability, the sensitivity of the net pension liability to the discount rate, and increased investment activity disclosures. The total pension liability, determined in accordance with GASB 67, is presented in Note 7 and in the Required Supplementary Information.

GASB 68 requires participating employers recognize a liability for their proportionate share of net pension liability. It also requires participating employers recognize pension expense and report deferred outflows and inflows of resources related to pensions for their proportionate share of collective pension expense and collective deferred outflows and inflows or resources related to pensions. The employer proportionate share is discussed in Note 8.

Note 1 (b) - Method Used to Value Investments

Investments are reported at fair value on a trade date basis. Bonds and stocks traded on a national or international exchange are valued at the reported sales price at current exchange rates. Mortgages are valued on the basis of future principal and interest payments and are discounted at prevailing interest rates for similar instruments. The fair value of real estate and timber investments are based on net asset value estimates provided by the general partners' administrators or portfolio managers, which are compared to independent appraisals. Investments that do not have an established market are reported at estimated fair value. The fair value of the hedge fund (absolute return) and venture capital and partnership portfolios are based on valuations of the underlying companies as reported by the general partner or portfolio manager.

Note 1 (c) - Net Investment in Capital Assets

MPERS capitalizes assets with an expected useful life greater than one year and a cost greater than \$1,000. Capital assets are depreciated on the straight-line method over the estimated useful lives of the related assets. The estimated useful lives are as follows:

Furniture, Equipment and Software 3 – 10 years Building and Improvements 30 years

Note 1 (d) - Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

For the Years Ended June 30, 2015 and 2014

NOTE 2 – PLAN DESCRIPTIONS AND CONTRIBUTION INFORMATION

MPERS is a body corporate and an instrumentality of the state as a multiple-employer, public employee retirement system with one plan that has three benefit structures known as the Closed Plan, the Year 2000 Plan, and the Year 2000 Plan-2011 Tier. The plan provides retirement, survivor, and disability benefits for employees of MoDOT, MSHP, and MPERS' staff. The plan is administered in accordance with the requirements of a cost sharing, multiple-employer, public employee retirement plan under the Revised Statutes of Missouri. In MPERS are vested the powers and duties specified in sections 104.010 to 104.312, 104.601 to 104.805, and 104.1003 to 104.1093, RSMo., and such other powers as may be necessary or proper to enable it, its officers, employees, and agents to carry out fully and effectively all the purposes outlined pursuant to these sections. Responsibility for the operation and administration

of the System is vested in the Board of Trustees, which consists of eleven members, four elected by the active and retired plan members, three Highway and Transportation Commissioners, a State Senator appointed by the President Pro-Tem of the Senate, a State Representative appointed by the Speaker of the House, and the Director of the MoDOT and Superintendent of the MSHP who serve as ex-officio members. Detailed information regarding contributions can be found in Note 5.

Generally, all covered employees hired before July 1, 2000 are eligible for membership in the Closed Plan. All covered employees hired on or after July 1, 2000 and before January 1, 2011 are eligible for membership in the Year 2000 Plan. All covered employees hired on or after January 1, 2011 are eligible for membership in the Year 2000 Plan's 2011 Tier.

Membership in the Closed Plan, Year 2000 Plan, and 2011 Tier as of June 30

| | 2015 | | | 2015 | 2014 |
|---|--------|-----------|-----------|--------|--------|
| | Closed | Year 2000 | 2011 Tier | Total | Total |
| Retirees, Beneficiaries, and Disabilities | | | | | |
| Currently Receiving Benefits | 5,090 | 3,529 | 2 | 8,621 | 8,438 |
| Terminated Employees Entitled to | | | | | |
| But Not Yet Receiving Benefits | 1,564 | 736 | 0 | 2,300 | 2,222 |
| Active Employees | | | | | |
| Vested | 3,062 | 2,600 | 0 | 5,662 | 5,977 |
| Non-Vested | 2 | 155 | 1,554 | 1,711 | 1,438 |
| Total Membership | 9,718 | 7,020 | 1,556 | 18,294 | 18,075 |

Closed Plan Description

Employees covered by the Closed Plan are fully vested for benefits upon receiving 5 years of creditable service. Under the Closed Plan, MoDOT and civilian employees may retire with full benefits upon the earliest of attaining:

- Age 65 with 4 or more years of creditable service (active);
- Age 65 with 5 or more years of creditable service (terminated & vested);
- Age 60 with 15 or more years of creditable service (active or terminated & vested); or
- "Rule of 80" at least age 48 with sum of member's age and service equaling 80 or more (active or terminated & vested).

The following provisions apply for uniformed patrol members of the Closed Plan:

- Age 55 with 4 or more years of creditable service (active);
- Age 55 with 5 or more years of creditable service (terminated & vested);
- "Rule of 80" at least age 48 with sum of member's age and service equaling 80 or more (active or terminated & vested); or
- Mandatory retirement at age 60 (active).

All non-uniformed members may retire early, with reduced benefits, at age 55 with at least 10 years of creditable service.

The base benefit in the Closed Plan is equal to 1.6% multiplied by the final average pay multiplied by years of

For the Years Ended June 30, 2015 and 2014

creditable service. For members of the uniformed patrol, the base benefit is calculated by applying the same formula, then multiplying the product by 1.333333.

Retired uniformed members will receive an additional benefit of \$90 per month, plus cost-of-living adjustments (COLAs), until attainment of age 65. This payment, however, is reduced by any amount earned during gainful employment. This benefit is not available to uniformed members hired after January 1, 1995.

For members employed prior to August 28, 1997, COLAs are provided annually based on 80% of the increase in the consumer price index for all urban consumers for the United States (CPI-U). The minimum rate is 4% and the maximum rate is 5%, until the cumulative amount of COLAs equals 65% of the original benefit. Thereafter, the 4% minimum rate is eliminated and the annual COLA rate will be equal to 80% of the increase in the CPI-U (annual maximum of 5%). For members employed on or after August 28, 1997, COLAs are provided annually based on 80% of the increase in the CPI-U, up to a maximum rate of 5%.

The BackDROP is a payment option that is available to eligible members upon retirement. This option provides for a benefit to be calculated as if the member elected to retire at a previous date. If the BackDROP is elected, the monthly benefit payable on the actual retirement date is based on the benefit that would have been received by the member had he/she left employment and retired on the BackDROP date. In addition, the member will receive a lump sum payment equal to 90% of the life income annuity amount the member would have received during the BackDROP period. This lump sum amount includes any COLAs and other benefit increases; also, credit will be received for the unused sick leave balance as of the date of retirement.

The life income annuity payment option (which contains no provision for survivorship) and the life income with 60 or 120 month guaranteed payment options are available to all members. Joint and 50% or 100% survivor options are available if married at the time of retirement. In the Closed Plan, the reduction for the joint & 100% survivor option is based on the difference between the age of the member and the survivor. There is no reduction for the joint and 50% survivor option.

If a reduced joint and survivor option is chosen at the time of retirement and the spouse precedes the member in death, the benefit will revert back (pop-up) to a normal annuity.

Members may name a new spouse as beneficiary if:

- They were single at retirement and since married;
- They elected a spouse option at the time of retirement, the spouse preceded the member in death, and then a remarriage occurred.

The member has 1 year from the date of marriage to reelect a payment option and name a new spouse.

All members who retire from active employment or longterm disability, or begin receiving normal or work-related disability benefits, on or after September 28, 1985, are provided a \$5,000 death benefit payable to designated beneficiaries.

Year 2000 Plan Description

Employees covered by the Year 2000 Plan are fully vested for benefits upon earning 5 years of creditable service. Under the Year 2000 Plan, MoDOT and civilian employees may retire with full benefits upon the earliest of attaining:

- Age 62 and with 5 or more years of creditable service (active or terminated & vested);
- "Rule of 80" at least age 48 with sum of member's age and service equaling 80 or more (active).

The following provisions apply for uniformed patrol members of the Year 2000 Plan:

- "Rule of 80" at least age 48 with sum of member's age and service equaling 80 or more (active);
- Mandatory retirement at age 60 with 5 or more years of creditable service (active only).

All members may retire early with reduced benefits at age 57 with at least 5 years of creditable service.

The base benefit in the Year 2000 Plan is equal to 1.7% multiplied by the final average pay multiplied by years of creditable service. Members retiring under the Rule of 80, and uniform patrol members retiring at the mandatory retirement age (currently 60) with 5 years of creditable service, receive an additional temporary benefit until age 62. The temporary benefit is equivalent to 0.8% multiplied by final average pay multiplied by years of creditable service.

COLAs are provided annually based on 80% of the increase in the CPI-U, up to a maximum rate of 5%.

The BackDROP is a payment option that may be available to members upon retirement. This option provides for a monthly benefit to be calculated as if the member elected to retire at a previous date. If the

For the Years Ended June 30, 2015 and 2014

BackDROP is elected, the monthly benefit payable on the actual retirement date is based on the benefit that would have been received by the member had he/she left employment and retired on the BackDROP date. In addition, the member will receive a lump sum payment equal to 90% of the life income annuity amount the member would have received during the BackDROP period. This lump sum amount includes any temporary benefits, COLAs and other benefit increases; also, credit will be received for the unused sick leave balance as of the date of retirement.

The life income annuity payment option (with no provision for survivorship) and the life income with 120 or 180 months guaranteed payment options are available to all members. Joint and 50% or 100% survivorship options are available if married at the time of retirement. The reduction for the joint and 50% or 100% survivor options is based on the member's age at retirement, as well as the age difference between the member and the survivor.

If a reduced joint and survivor option is chosen at the time of retirement and the spouse precedes the member in death, the benefit will revert back (pop-up) to a normal annuity.

Members may name a new spouse for survivor benefits if:

- They were single at retirement and since married;
- They elected a spouse option at the time of retirement, the spouse preceded the member in death, and then a remarriage occurred.

The member has 1 year from the date of marriage to reelect the payment option and name a new spouse.

All members who retire from active employment or longterm disability, or begin receiving work-related disability benefits, on or after July 1, 2000, are provided a \$5,000 death benefit payable to designated beneficiaries.

Year 2000 Plan-2011 Tier Description

Employees covered by the 2011 Tier are fully vested for benefits upon earning 10 years of creditable service. Under the 2011 Tier, MoDOT and civilian employees may retire with full benefits upon the earliest of attaining:

- Age 67 and with 10 or more years of creditable service (active or terminated & vested);
- "Rule of 90" at least age 55 with sum of member's age and service equaling 90 or more (active only).

Active MoDOT and civilian employees may retire early

with reduced benefits at age 62 with at least 10 years of creditable service.

The following provisions apply for uniformed patrol members of the 2011 Tier:

- Age 55 and with 10 or more years of creditable service (active only);
- Mandatory retirement at age 60 with no minimum service amount (active only).

Terminated and vested uniformed patrol employees may retire at age 67 with 10 or more years of creditable service.

The base benefit in the 2011 Tier is equal to 1.7% multiplied by the final average pay multiplied by years of creditable service. Members retiring under the Rule of 90, and uniform patrol members retiring at the mandatory retirement age (currently 60) or at age 55 with 10 years of creditable service, receive an additional temporary benefit until age 62. The temporary benefit is equivalent to 0.8% multiplied by final average pay multiplied by years of creditable service.

COLAs are provided annually based on 80% of the change in the CPI-U, up to a maximum rate of 5%.

The life income annuity payment option (with no provision for survivorship) and the life income with 120 or 180 months guaranteed payment options are available to all members. Joint and 50% or 100% survivorship options are available if married at the time of retirement. The reduction for the joint and 50% or 100% survivor options is based on the member's age at retirement, as well as the age difference between the member and the survivor.

If a reduced joint and survivor option is chosen at the time of retirement and the spouse precedes the member in death, the benefit will revert back (pop-up) to a normal annuity.

Members may name a new spouse for survivor benefits if:

- They were single at retirement and since married;
- They elected a spouse option at the time of retirement, the spouse preceded the member in death, and then a remarriage occurred.

The member has 1 year from the date of marriage to reelect the payment option and name a new spouse.

All members who retire from active employment or

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long-term disability, or begin receiving work-related disability benefits, on or after January 1, 2011, are provided a \$5,000 death benefit payable to designated beneficiaries

Contributions

Beginning January 1, 2011, employee contributions of 4% of gross pay are required for those covered by the Year 2000 Plan-2011 Tier.

Employer contributions are determined through annual actuarial valuations. Administrative expenses are financed through contributions from participating employers and investment earnings.

Participating employers are required to make contributions to the plan based on the actuarially determined rate. Prior to August 13, 1976, contributions by all plan members were required. Accumulated employee contributions made prior to that time, plus interest, were refunded to applicable members. Maximum contribution rates were eliminated August 13, 1976. Detailed information regarding contributions can be found in Note 5.

Schedule of Funded Status and Funding Progress

| Actuarial Valuation Date | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) Entry Age (b) | Unfunded AAL (UAAL) (b-a) | Percent Funded (a/b) | Annual Covered Payroll (c) | UAAL Percentage of Covered Payroll ((b-a)/c) |
|--------------------------------|--|--|---------------------------------|----------------------------|-------------------------------------|---|
| 6/30/2015 | \$1,967,001,509 | \$3,715,845,651 | \$1,748,844,142 | 52.94% | \$342,264,593 | 510.96% |

The schedule of funding progress in the Actuarial Section presents multiyear trend information about whether the actuarial values of plan assets are increasing or decreasing over time relative to the actuarial accrued

liabilities for benefits. The actuarial assumptions used in the June 30, 2015 valuation were based on the result of an actuarial experience study for the period July 1, 2007 - June 30, 2012.

Additional Information as of the June 30, 2015 Actuarial Valuation follows:

Valuation Date
Actuarial Cost Method
Amortization Method
Remaining Amortization Period
Asset Valuation Method
Actuarial Assumptions:

Investment Rate of Return Projected Salary Increases COLAs Price Inflation 6/30/2015 Entry Age Closed, Level Percent of Payroll 16 Years* 3-Year Smoothing

> 7.75% 3.5% to 11% 2.4% Compound 3.0%

^{*}single equivalent period

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NOTE 3 - DEPOSITS AND INVESTMENTS

The Board of Trustees has established policies and procedures by which funds are invested by bank custodians and investment managers. Section 104.150, RSMo, provides the authority for the board to invest MPERS funds. Plan assets are invested in a diversified portfolio following prudent standards for preservation of capital, with the goal of achieving the highest possible rate of return consistent with MPERS' tolerance for risk. The Board of Trustees establishes MPERS' policy in regard to the allocation of invested assets, and may amend the policy. The following is MPERS current asset allocation policy:

| Asset Class | Target Allocation |
|----------------|-------------------|
| Global Equity | 30% |
| Private Equity | 15% |
| Fixed Income | 25% |
| Real Assets | 5% |
| Real Estate | 10% |
| Hedge Funds | 15% |
| Cash | 0% |

Note 3 (a) - Deposit and Investment Risk Policies Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the System's investment in a single issuer. Within the traditional asset classes (equities and fixed income), the consultant will aggregate exposures across asset classes to create measures of concentration including industries, countries and security issuer for Investment staff review.

Investment Custodial Credit Risk

Custodial credit risk is an investment risk that, in the event of the failure of the counterparty to a transaction, the System will not be able to recover the value of its investment or the collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the System, and are held by either: a) the counterparty or b) the counterparty's trust department or agent but not in the System's name. It is the policy of the System to require that all investments be clearly marked as to ownership and, to the extent possible, shall be registered in the name of the System.

Cash Deposit Custodial Credit Risk

Cash deposit custodial credit risk is the risk that, in the event of the failure of depository financial institution, the System will not be able to recover deposits or will not be able to recover collateral securities that are in the possession of an outside party. Missouri state law requires that all public funds must be collateralized with acceptable securities having market values of at least 100% of the amount of funds on deposit (less any amount covered by FDIC insurance).

Market Risk

Market risk is the risk that the fair value of an investment will be adversely impacted due to a change in value of the underlying market. The three primary market risks prevalent in the System's investment portfolio are equity prices, interest rates, and foreign currencies. Equity risk is the risk that stock prices fall and/or the volatility in the equity market increases. Interest rate risk is the risk that fixed income securities (or any investment primarily valued on a yield basis) will drop in value due to an increase in interest rates. Currency risk is the risk that changes to foreign exchange rates will adversely impact the fair value of non-U.S. Dollar denominated assets. The System protects the portfolio against market risks by adopting a diversified asset allocation that limits the amount of exposure to each underlying market risk. Market risks are also controlled by monitoring the types, amounts, and degree of risk that each investment manager takes for their specific mandate.

Investment Credit Risk

Investment credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Unless authorized under a separate Investment Management Agreement or operating agreement, it is the policy of the System to limit fixed income managers to purchasing securities that possess a minimum credit rating of "Baa" by Moody's and "BBB" by Standard & Poor's. Issues subsequently downgraded below these ratings must be brought to the attention of the Chief Investment Officer. Where counterparty risk is present, the System's investment managers seek to control credit risk through counterparty credit evaluations and approvals, counterparty credit limits and exposure monitoring procedures.

Note 3 (b) - Cash Deposits

Cash balances include short-term securities held by the custodial bank to meet future obligations and operating balances held by the depository bank. As of June 30, 2015 and 2014, MPERS had carrying amount of deposits of (\$127,348) and (\$38,925), respectively, and a bank balance of \$1 and \$2, respectively. The FDIC covered the bank balances. To maximize investment income,

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cash is invested in overnight repurchase agreements, thus causing the negative cash amounts disclosed above. The balances in these repurchase agreements at June 30, 2015 and 2014 were \$486,416 and \$233,061, respectively. As of June 30, 2015 and 2014, no investments were held as repurchase agreements that were uninsured or unregistered, with securities held by the counterparty or by its trust department or agent but not in MPERS' name.

Note 3 (c) - Concentrations

No investments in any one organization (other than those issued or sponsored by the U.S. government and those in pooled investments) represent 5% of plan net position.

Note 3 (d) - Rate of Return

For the years ended June 30, 2015 and 2014, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 6.71% and 17.58%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Note 3 (e) – Investments

The following table shows MPERS' investments by type.

Summary of Investments by Type at June 30

| | 2015 | | 2014 | |
|-------------------------------------|--------------------|----------------|--------------------|---------------|
| | Carrying Amount | Fair Value | Carrying Amount | Fair Value |
| Government Obligations | \$ 180,913,855 | \$ 187,018,431 | \$ 141,084,282 \$ | 145,598,291 |
| Corporate Bonds | 26,467,031 | 27,747,634 | 31,435,313 | 32,651,714 |
| Stock and Rights/Warrants | 366,823,175 | 495,604,884 | 416,551,454 | 595,943,370 |
| Real Estate | 181,625,918 | 199,368,748 | 178,784,181 | 203,400,219 |
| Mortgages & Asset-Backed Securities | s 206,349,682 | 210,369,202 | 162,913,148 | 176,678,785 |
| Hedge Funds (Absolute Return) | 190,555,442 | 235,475,642 | 160,996,066 | 204,257,912 |
| Limited Partnerships | 488,929,018 | 574,219,602 | 442,844,448 | 539,413,897 |
| Short-Term Investments | 62,078,670 | 62,078,670 | 39,999,208 | 39,999,208 |
| Securities Lending Collateral | 80,780,418 | 80,780,418 | 86,192,337 | 86,192,337 |
| Total Investments | \$1,784,523,209 | 2,072,663,231 | \$1,660,800,437 | 2,024,135,733 |

Reconciliation to Statement of Fiduciary Net Position:

| Less: Repurchase Agreements Less: Securities Lending Collateral | (486,416) (80,780,418) | (233,061) (86,192,337) |
|---|---------------------------|---------------------------|
| Investments per Statement of | (60,760,416) | (00,172,337) |
| Fiduciary Net Position | \$1,991,396,397 | \$1,937,710,335 |

Certain investments are not listed on national exchanges, over-the-counter markets, nor do they have quoted market prices. Their valuation is based on the most current net asset values, activities through year-end, independent appraisals, and/or good faith estimates of the investments fair value provided by the general partner or portfolio manager. The estimated fair value of these investments may differ significantly from values that would have been used had a ready market existed. The following investments were priced using

those methods and comprised 51% of the total fair value of the System's investments as of June 30, 2015:

| Real Estate | \$199,368,748 |
|-------------------------------|-----------------|
| Hedge Funds (Absolute Return) | 235,475,642 |
| Limited Partnerships | 574,219,602 |
| · | \$1,009,063,992 |

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Note 3 (f) – Investment Interest Rate Risk

The following table summarizes the maturities of government obligations, corporate bonds,

convertible corporate bonds, mortgages, and assetbacked securities which are exposed to interest rate risk.

Summary of Weighted Average Maturities

| | Fair Investment Maturities (in years) as of 6/30/20 | | | | 6/30/2015 |
|----------------------------|---|-------------|--------------|---------------|---------------|
| Investment Type | Value | Less than 1 | 1 - 5 | 6 - 10 | More than 10 |
| Asset-Backed Securities | \$ 59,353,277 | \$ 845,857 | \$ 3,116,147 | \$ 27,976,859 | \$ 27,414,414 |
| Commercial Mortgage- | | | | | |
| Backed Securities | 63,986,730 | 0 | 2,058,307 | 0 | 61,928,423 |
| Corporate Bonds | 16,063,854 | 1,013,530 | 3,769,094 | 495,941 | 10,785,289 |
| Government Agencies | 70,379,870 | 786,377 | 1,174,320 | 9,806,811 | 58,612,362 |
| Government Bonds | 5,029,376 | 0 | 0 | 0 | 5,029,376 |
| Government Mortgage- | | | | | |
| Backed Securities | 50,704,052 | 0 | 0 | 3,843,239 | 46,860,813 |
| Government-issued Comme | rcial | | | | |
| Mortgage-Backed | 9,551,830 | 0 | 2,938,399 | 0 | 6,613,431 |
| Index Linked Govt Bonds | 23,690,938 | 0 | 0 | 16,015,298 | 7,675,640 |
| Municipal/Provincial Bonds | 87,918,246 | 0 | 4,684,398 | 18,602,431 | 64,631,417 |
| Non-Govt Backed C.M.O.s | 26,773,313 | 0 | 340,490 | 0 | 26,432,823 |
| Total | \$413,451,486 | \$2,645,764 | \$18,081,155 | \$76,740,579 | \$315,983,988 |
| Pooled Investments | 11,683,781 | | | - | |
| Grand Total | \$425,135,267 | | | | |

For the Years Ended June 30, 2015 and 2014

Note 3 (g) - Investment Credit Ratings

The following table summarizes the credit ratings of the government obligations, corporate bonds, mortgages, and asset-backed securities.

Summary of Credit Ratings

| Sommary of Crean Rainings | | 6/30/2015 | 6/30/2014 |
|--|-----------------------|---------------|---------------|
| Investment Type | Quality Rating | Fair Value | Fair Value |
| 71 | . , , | | |
| Asset-Backed Securities | AAA | \$ 40,566,775 | \$ 3,748,513 |
| Asset-Backed Securities | AA | 11,888,727 | 9,589,678 |
| Asset-Backed Securities | CC | 845,857 | 1,143,616 |
| Asset-Backed Securities | not rated | 6,051,918 | 147,135 |
| Commercial Mortgage-Backed Securities | AAA | 4,043,149 | 2,599,704 |
| Commercial Mortgage-Backed Securities | Α | 4,996,225 | 5,158,445 |
| Commercial Mortgage-Backed Securities | BBB | 6,749,366 | 6,901,704 |
| Commercial Mortgage-Backed Securities | BB | 349,504 | 363,707 |
| Commercial Mortgage-Backed Securities | В | 10,638,640 | 15,814,022 |
| Commercial Mortgage-Backed Securities | CCC | 6,120,382 | 11,115,641 |
| Commercial Mortgage-Backed Securities | D | 0 | 3,976,088 |
| Commercial Mortgage-Backed Securities | not rated | 29,286,558 | 28,267,388 |
| Commercial Mortgage-Backed Securities | us gov guar | 1,802,906 | 0 |
| Corporate Bonds | AA | 5,305,275 | 5,293,652 |
| Corporate Bonds | Α | 249,698 | 250,710 |
| Corporate Bonds | BBB | 202,216 | 1,132,590 |
| Corporate Bonds | not rated | 10,306,665 | 14,491,885 |
| Government Agencies | AA | 68,823,057 | 47,460,435 |
| Government Agencies | us gov guar | 1,556,813 | 1,419,984 |
| Government Bonds | us gov guar | 5,029,376 | 4,858,124 |
| Government Mortgage-Backed Securities | not rated | 5,476,788 | 5,707,688 |
| Government Mortgage-Backed Securities | us gov guar | 45,227,264 | 61,019,468 |
| Govt issue Commercial Mortgage-Backed Securities | AAA | 943,058 | 0 |
| Govt issue Commercial Mortgage-Backed Securities | not rated | 0 | 2,359,211 |
| Govt issue Commercial Mortgage-Backed Securities | us gov guar | 8,608,772 | 8,208,095 |
| Index Linked Government Bonds | us gov guar | 23,690,938 | 24,248,914 |
| Municipal/Provincial Bonds | AAA | 20,963,586 | 16,927,158 |
| Municipal/Provincial Bonds | AA | 54,553,111 | 42,072,533 |
| Municipal/Provincial Bonds | Α | 2,658,714 | 420,707 |
| Municipal/Provincial Bonds | not rated | 9,742,835 | 8,190,436 |
| Non-Government Backed C.M.O.s | AA | 1,187,235 | 1,569,219 |
| Non-Government Backed C.M.O.s | Α | 945,966 | 1,192,862 |
| Non-Government Backed C.M.O.s | BB | 618,727 | 278,359 |
| Non-Government Backed C.M.O.s | В | 745,231 | 118,456 |
| Non-Government Backed C.M.O.s | CCC | 1,636,744 | 422,795 |
| Non-Government Backed C.M.O.s | CC | 283,232 | 89,547 |
| Non-Government Backed C.M.O.s | D | 9,611,081 | 803,114 |
| Non-Government Backed C.M.O.s | not rated | 11,745,097 | 6,084,330 |
| Pooled Investments | not rated | 11,683,781 | 11,482,877 |
| Total | | \$425,135,267 | \$354,928,790 |

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Note 3 (h) - Investment Foreign Currency Risk

Exposure to Foreign Currency Risk as of June 30

| Foreign Currency | Equities | Real Estate/ Partnerships | 2015 Total | 2014 Total |
|------------------------|-------------|------------------------------|---------------|---------------|
| Australian Dollar | \$1,226,071 | \$ 0 | \$ 1,226,071 | \$ 1,560,255 |
| British Pound Sterling | 1,442,249 | 8,810,985 | 10,253,234 | 5,784,728 |
| Euro | 1,622,094 | 15,461,203 | 17,083,297 | 23,085,996 |
| Hong Kong Dollar | 694,546 | 0 | 694,546 | 0 |
| Japanese Yen | 1,288,375 | 0 | 1,288,375 | 1,801,689 |
| Singapore Dollar | 0 | 0 | 0 | 395,460 |
| Total Exposure Risk | \$6,273,335 | \$24,272,188 | \$30,545,523 | \$32,628,128 |

Note 3 (i) - Securities Lending

In accordance with the Board of Trustees' investment policy, MPERS participates in a securities lending program. The Northern Trust Company administers the program. There are no restrictions on the amount of securities that may be lent.

Securities that may be loaned include U.S. government and agency securities, corporate equity, and fixed income securities. Collateral may include cash, U.S. government securities and irrevocable letters of credit. U.S. securities are loaned in exchange for collateral valued at 102% of the fair value of the securities, plus any accrued interest. Non-U.S. securities are loaned in exchange for collateral valued at 105% of the fair value of the securities, plus any accrued interest. On June 30, 2015 and 2014, MPERS had no credit risk exposure to borrowers, since the amount of collateral exceeded the amount of the loans.

Non-cash collateral cannot be pledged or sold unless the borrower defaults. The average term of the System's loans was approximately 105 days and 95 days, as of June 30, 2015 and June 30, 2014, respectively. Cash open collateral is invested in a short-term investment pool, which had an interest sensitivity of 26 days and

37 days, as of June 30, 2015 and 2014, respectively. Cash collateral may also be invested separately in "term loans", in which case the investments match the loan term. These loans can be terminated on demand by either lender or borrower. There were no known violations of legal or contractual provisions, or borrower or lending agent default losses. There were no dividends or coupon payments owing on the securities lent. Securities lending earnings are credited on approximately the fifteenth day of the following month.

Indemnification deals with a situation in which a client's securities would not be returned due to the insolvency of a borrower and Northern Trust would fail to live up to its contractual responsibilities relating to the lending of those securities. Northern Trust's responsibilities include performing appropriate borrower and collateral investment credit analyses and demanding adequate types and levels of collateral.

The collateral held (including both cash collateral recognized in the Statement of Fiduciary Net Position and non-cash collateral) was as follows at June 30:

Collateral Held

| Investment Type | 2015 | 2014 |
|--|--------------|--------------|
| Equities | \$74,689,586 | \$68,070,631 |
| Government & government sponsored securities | 7,838,159 | 6,483,650 |
| Corporate bonds | 1,177,679 | 1,054,724 |
| | \$83,705,424 | \$75,609,005 |

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Note 3 (j) - Derivatives

A derivative financial instrument is an investment whose value depends on the values of one or more underlying assets, financial indexes, or commodity prices. These investments include futures contracts, options contracts, and forward foreign currency exchange. Derivative financial instruments involve credit risk and market risk, as described in Note 3 (a), in varying levels. The notional value related to these derivative instruments are generally not recorded on the financial statements;

however, the change in market value of these instruments is incorporated in performance. The notional/market value of \$80,413,805 and \$20,184,080 for the various contracts in MPERS' portfolio as of June 30, 2015 and 2014, respectively, is recorded in investments on the Statement of Fiduciary Net Position. The change in fair value of \$80,401,785 and \$20,184,080 for the years ended June 30, 2015 and 2014, respectively, is recorded in investment income on the Statement of Changes in Fiduciary Net Position.

Investment Derivatives as of June 30, 2015

| Туре | Classification | Notional/ Market Value | Cost | Unrealized Gain (Loss) |
|-------------------|----------------------------|---------------------------|----------|---------------------------|
| Futures Contracts | Investments, at fair value | \$81,189,900 | \$0 | \$81,189,900 |
| Swap Contracts | Investments, at fair value | (788,115) | 0 | (788,115) |
| Rights/Warrants | Investments, at fair value | 12,020 | 12,020 | \$0 |
| - | | \$80,413,805 | \$12,020 | \$80,401,785 |

Investment Derivatives as of June 30, 2014

| Туре | Classification | Notional/ Market Value | Cost | Unrealized Gain (Loss) |
|-------------------|----------------------------|---------------------------|------|---------------------------|
| Futures Contracts | Investments, at fair value | \$20,184,080 | \$0 | \$20,184,080 |
| | | \$20,184,080 | \$0 | \$20,184,080 |

Through the use of derivatives, MPERS is exposed to risk that the counterparties involved in the contracts are unable to meet the terms of their obligation.

MPERS' investment managers seek to control this risk through counterparty credit evaluations and approvals,

counterparty credit limits, and exposure monitoring procedures. MPERS anticipates the counterparties will be able to satisfy their obligations under the contracts. The associated counterparty's credit rating is an A-.

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NOTE 4 - RECEIVABLES

Receivables at June 30 consisted of the following:

Receivables

| Туре | 2015 | 2014 |
|----------------------------------|--------------|--------------|
| Contributions-MoDOT | \$ 5,182,989 | \$ 4,796,972 |
| Contributions-MSHP Non-Uniformed | 1,122,234 | 1,013,551 |
| Contributions-MSHP Uniformed | 1,957,324 | 1,754,607 |
| Contributions-Retirement System | 130,405 | 140,542 |
| Amounts Due from Members | 2,796 | 0 |
| Commission Recapture | 692 | 2,796 |
| Securities Lending | 18,901 | 15,710 |
| Investment Interest & Income | 4,264,812 | 7,241,176 |
| Investment Sales | 10,567,358 | 97,323 |
| | \$23,247,511 | \$15,062,677 |

NOTE 5 - CONTRIBUTIONS

MoDOT, the Highway Patrol, and MPERS make contributions to the System, as do employees covered under the Year 2000 Plan-2011 Tier. MPERS permanent funding policy provides for actuarially determined employer contributions using the entry-age normal cost method on a closed group basis (consisting of normal cost and amortization of any unfunded accrued liabilities over a 30-year period, beginning July 1, 2006). (The objective is to reduce the period by one year each year.) A temporary accelerated policy has been adopted where the total contribution is based on entry-age normal cost plus a 15-year amortization period for unfunded retiree liabilities and a 30-year amortization period for other unfunded liabilities. Both amortization periods are closed periods starting July 1, 2010. This temporary accelerated policy was adopted by the MPERS' Board of Trustees on September 17, 2009 and will remain in effect until such time as the retiree liability becomes 100% funded or the permanent policy produces a higher contribution rate. Actuarially determined rates,

expressed as percentages of annual covered payroll, provide for amounts sufficient to fund those benefits designated by state statute to be funded in advance. Actuarial assumptions used to compute contribution requirements are the same as those used to compute the pension benefit obligation. The employee contribution rate for members of the Year 2000 Plan-2011 Tier is set by statute.

Required employer contributions totaling \$200,638,571 and \$183,353,841 for fiscal years 2015 and 2014, respectively, represent funding of normal costs and amortization of the unfunded accrued liability. Actual contributions made were 100% of required contributions. Contribution rates as determined by the System's actuary for the years ended June 30, 2015 and 2014 are shown in the following table. The Board established actual rates to be the same as the actuarially determined rates.

Contribution Rates

| 2015 | | | | 2014 | |
|-----------------------------------|---------------------|-----------------------|--------------------------------|---------------------|-----------------------|
| MoDOT, MPERS & Civilian Patrol | Uniformed Patrol | 2011 Tier Employee | MoDOT, MPERS & Civilian Patrol | Uniformed Patrol | 2011 Tier Employee |
| 58.76% | 58.19% | 4.00% | 54.25% | 55.23% | 4.00% |

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At the September 26, 2014 Board meeting, the Board adopted the use of a contribution stabilization reserve that would result in an MPERS employer contribution rate similar to the fiscal year 2015 rates. The reserve is intended to keep the contribution relatively level over time and may be used if the market experiences a downturn in the future. The Board further adopted

(in February 2015) that the employer contribution rate would not fall below 58% unless 1) the fund became fully funded or 2) the contribution stabilization reserve reached \$250 million. The balance of the reserve as of June 30, 2015 and June 30, 2014 was \$140,830,104 and \$77,644,000, respectively.

NOTE 6 - DEFERRED RETIREMENT OPTION PROGRAM

MPERS currently provides a BackDROP option. This is an election made at the time of actual retirement. In effect, it provides members an option to elect to receive a portion of their benefits as cash. Since the election is not made until the member actually retires, the option is not treated as a DROP provision in accordance with generally accepted accounting principles.

NOTE 7 - NET PENSION LIABILITY OF EMPLOYERS

The components of the net pension liability of the employers at June 30, 2015, were as follows:

Total pension liability \$3,715,845,651
Plan fiduciary net position (2,009,367,134)
Employers' net pension liability \$1,706,478,517

Plan fiduciary net position as a percentage of the total pension liability 54.08%

Covered Employee Payroll \$342,264,593

Employers' net pension liability as a percentage of covered employee payroll 498.58%

The components of the net pension liability of the employers at June 30, 2014, were as follows:

Total pension liability \$3,650,241,741
Plan fiduciary net position (1,957,456,213)
Employers' net pension liability \$1,692,785,528

Plan fiduciary net position as a percentage of the total pension liability 53.63%

Covered Employee Payroll \$336,590,797

Employers' net pension liability as a percentage of covered employee payroll 502.92%

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of June 30, 2015 and 2014, using the following actuarial assumptions, applied to all prior periods included in the measurement:

Inflation3.0%Salary Increases3.5% to 11%Investment Rate of Return7.75%

The mortality tables, for post-retirement mortality, used in evaluating allowances to be paid to non-disabled pensioners were the R-P 2000 Combined Healthy Mortality Tables projected 16 years and set back 1 year for males and females. Pre-retirement mortality used was 70% for males and 50% for females of the post-retirement tables set back 1 year for males and set back 1 year for females. Disabled pension mortality was based on PBGC Disabled mortality tables. The healthy mortality tables include a margin for mortality improvement. The margin is in the 16-year projection. The disabled mortality tables do not include a margin for mortality improvement.

The long-term (30 year) expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate

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of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return were adopted by the plan's trustees after considering input from the plan's investment consultant(s) and actuary(s). These estimates for each major asset class included in MPERS' target asset allocation as of June 30, 2015 and 2014 (see NOTE 3) are summarized in the following table:

| | Long-Term Real Rate | |
|----------------|------------------------|-------|
| Asset Class | 2015 | 2014 |
| Global Equity | 4.80% | 5.05% |
| Private Equity | 6.50% | 6.75% |
| Fixed Income | 0.50% | 0.59% |
| Real Assets | 4.75% | 4.75% |
| Real Estate | 2.75% | 2.75% |
| Hedge Funds | 3.00% | 3.25% |

Discount Rate

A single discount rate of 7.75% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.75%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the plan's net pension liability, calculated using a single discount rate of 7.75%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher:

Current Single Discount

| | 1% Decrease 6.75% | Rate Assumption 7.75% | 1% Increase 8.75% |
|----------------------------|----------------------|-----------------------|----------------------|
| 2015 Net Pension Liability | \$2,133,261,040 | \$1,706,478,517 | \$1,328,460,451 |
| 2014 Net Pension Liability | \$2,127,509,196 | \$1,692,785,528 | \$1,330,274,056 |

NOTE 8 - EMPLOYER PROPORTIONATE SHARE

MPERS, as the administrative agent for the pension system, is also an employer of the pension system. The administrative expenses of the pension system are included in the deductions to the pension system's fiduciary net position. While the employer contributions of the other participating employers are funded from outside revenue sources, the employer contributions of MPERS are funded from sources already recognized as revenues, such as earnings on plan investments or contributions paid by the other participating employers.

Attempting to allocate a portion of the net pension liability to MPERS as an employer would result in an allocation of the net pension liability to the other participating employers. Accordingly, MPERS excludes its contributions from the employer proportionate share calculation for the reporting of a net pension liability, by assigning itself a proportionate share of 0%. This exclusion in essence shifts the portion of the net pension liability that would accrue to MPERS to the other participating employers.

For the Years Ended June 30, 2015 and 2014

NOTE 9 – PERSONAL SERVICES AND RETIREMENT PLAN

MPERS employed 16 full-time employees on June 30, 2015 and 17 on June 30, 2014. Seven former MPERS employees have retired. Full-time employees are also members of the System. For these employees, MPERS accrued 58.76% of payroll during FY15, amounting to \$907,064, which was equal to the required contribution.

The net obligations for FY15 and the two preceding years are shown below. These amounts are recorded as both a contribution and administrative expense. Information regarding the retirement plans can be found in Notes 2 and 5.

Net Obligations

| Year Ended | Annual Requir | ed Contribution | Percent | Net |
|------------|----------------------|-----------------|-------------|------------|
| June 30 | Percent | Dollars | Contributed | Obligation |
| 2013 | 50.92(1) | 562,535 | 100 | \$0 |
| 2014 | 54.25 ⁽¹⁾ | 739,002 | 100 | \$0 |
| 2015 | 58.76 ⁽¹⁾ | 907,064 | 100 | \$0 |

⁽¹⁾ The Annual Required Contribution rate is equal to the Actuarially Required Contribution rate.

NOTE 10 – OTHER POST-EMPLOYMENT BENEFITS (OPEB)

In addition to the retirement benefits described previously, MPERS provides a portion of health care insurance through the MoDOT and MSHP Medical and Life Insurance Plan (Insurance Plan) in accordance with Missouri State statutes. The Insurance Plan is considered an agent multiple-employer defined benefit plan administered by MoDOT. Medical insurance benefits are established by the Insurance Plan's Board of Trustees and are approved by the Missouri Highways and Transportation Commission. Benefits include general inpatient and outpatient medical services; mental, nervous and substance abuse care; and prescriptions. Eligible members are employees who retired from the System with a minimum of 5 years of service and who participate in the Insurance Plan. MoDOT issues a publicly available financial report that includes financial statements and required supplementary information for the Insurance Plan. Requests for this report should be addressed to MoDOT, Controller's Division, P.O. Box 270, Jefferson City, MO 65102.

Employer and member contributions are established by the Insurance Plan's Board of Trustees and are approved by the Missouri Highways and Transportation Commission. Premiums vary by coverage categories, which include retirees, certain disabled employees, spouses, certain dependents, and survivors of deceased employees and retirees. Member and employer required contribution rates average approximately 31.1% and 68.9%, respectively. The Insurance Plan is financed on a pay-as-you-go basis and is an internal service fund of MoDOT.

MoDOT's actuarial valuations for the Insurance Plan are performed biennially. The July 1, 2013 actuarial valuation was used for the FY15 and FY14 financial statements. For these periods, the annual required contribution (ARC) is equal to the annual OPEB cost. MPERS contributed \$33,025 in both FY15 and FY14 (38.5% of the ARC), including implicit rate subsidies. Although funding is not related to payroll amounts, an equivalent Annual Required Contribution (ARC) rate would be 6.4% and 7.1% of annual covered payroll of \$1,320,846 and \$1,203,673 for FY15and FY14, respectively. MPERS' share of the net OPEB obligation was \$643,809 and \$599,399 at June 30, 2015 and 2014, respectively. MPERS' share of the changes in the Insurance Plan's net OPEB obligation is shown as follows:

For the Years Ended June 30, 2015 and 2014

OPEB Cost and Obligation for the Year Ended June 30,

| Туре | 2015 | 2014 | 2013 |
|---|-----------|-----------|-----------|
| Normal Cost | \$ 31,597 | \$ 31,597 | \$ 60,443 |
| Amortization Payment | 50,392 | 50,392 | 61,594 |
| Interest | 30,663 | 28,637 | 26,188 |
| Adjustment to ARC | (35,217) | (32,572) | (27,022) |
| Annual OPEB Cost | 77,435 | 78,054 | 121,203 |
| Contributions | (33,025) | (33,025) | (26,739) |
| Increase in Net OPEB Obligation | 44,410 | 45,029 | 94,464 |
| Net OPEB Obligation - Beginning of Year | 599,399 | 554,370 | 459,906 |
| Net OPEB Obligation - End of Year | \$643,809 | \$599,399 | \$554,370 |
| % of Annual OPEB Cost Contributed | 42.6% | 42.3% | 22.1% |

Because the Insurance Plan is an internal service fund of MoDOT, the Insurance Plan's assets have not been set aside. Because of this, there is no actuarial value of assets, so the entire actuarial accrued liability (AAL) is unfunded. Based on an actuarial report dated July 1, 2013, MPERS' portion of the AAL is \$857,676, which is equal to MPERS' portion of the unfunded actuarial accrued liability (UAAL), as shown below.

Actuarial Accrued Liability

| Actuarial Accrued Liability | \$ 857,676 |
|---|-------------|
| Actuarial Value of Assets | 0 |
| Unfunded Actuarial Accrued Liability (UAAL) | \$857,676 |
| Funded Ratio (Actuarial Value of Plan Assets/AAL) | 0% |
| Covered Payroll | \$1,320,846 |
| UAAL as a Percentage of Covered Payroll | 65% |

Actuarial valuations of an ongoing plan reflect long-term perspective and involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. These calculations are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future. A schedule of funding progress is presented as required supplementary information following the notes to the financial statements. The schedule of funding progress represents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing relative to the AAL for benefits.

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employers and plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employers and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations. The actuarial methods and assumptions utilized in the valuation are shown on the following table.

Actuarial Methods and Assumptions

Actuarial Cost Method
UAAL Amortization Method
UAAL Amortization Period
UAAL Amortization Approach
Investment Return (Discount) Rate
Healthcare Cost Trend Rate

Projected Unit Credit Level Dollar Amount 30 Years Open 4.5% 8%, Decreasing To 5% in 2017 4.0%

Admin Expense Trend (Inflation) Rate

For the Years Ended June 30, 2015 and 2014

NOTE 11 – CAPITAL ASSETS

Summary of Changes in Capital Assets

| | 6/30/2014 Balance | Additions | Deletions/ Retirements | 6/30/2015 Balance |
|-----------------------------------|----------------------|-------------|---------------------------|----------------------|
| Land | \$ 84,000 | \$ 0 | \$ 0 | \$ 84,000 |
| Buildings | 581,619 | 0 | 0 | 581,619 |
| Furniture, Equipment and Software | 3,506,428 | 2,489 | 0 | 3,508,917 |
| Less: Accumulated Depreciation | (1,888,086) | (364,983) | 0 | (2,253,069) |
| Total | \$2,283,961 | (\$362,494) | \$ 0 | \$1,921,467 |
| | 6/30/2013 Balance | Additions | Deletions/ Retirements | 6/30/2014 Balance |
| Land | \$ 84,000 | \$ 0 | \$ 0 | \$ 84,000 |
| Buildings | 581,619 | 0 | 0 | 581,619 |
| Furniture, Equipment and Software | 3,479,053 | 27,375 | 0 | 3,506,428 |
| Less: Accumulated Depreciation | (1,517,469) | (370,617) | 0 | (1,888,086) |
| Total | \$2,627,203 | (\$343,242) | \$ 0 | \$2,283,961 |

NOTE 12 - RISK MANAGEMENT

MPERS is exposed to various risks of loss related to natural disasters, asset theft or damage, errors and omissions, torts, and employee injuries.

MPERS has purchased commercial insurance related to capital asset loss and damage. Ancillary coverage provided through the property policy includes coverage for accounts receivable, loss of money and securities, employee dishonesty, and forgery and alterations. MPERS carries a \$2 million umbrella liability policy. MPERS has coverage through Missouri Highway and Transportation Commission's Self-Insurance Fund related to workers' compensation. MPERS' has also purchased an executive risk insurance package that includes directors and officers liability (\$1 million aggregate

coverage), employment practices liability (\$1 million aggregate coverage) and fiduciary liability coverage (\$5 million aggregate coverage). These coverages are inclusive of legal defense costs and each policy carries a \$25,000 deductible. The State's Legal Expense Fund covers all state employees and officers, and MPERS has purchased surety bonds for the executive director and staff. Settlements have not exceeded coverages for each of the past three fiscal years.

MPERS has a disaster recovery plan that provides for continued computer operations at a remote location should the retirement office be unavailable for normal operations.

NOTE 13 – COMMITMENTS

As of June 30, 2015, MPERS has \$330,297,313 unfunded commitments to purchase alternative investments.

SCHEDULE OF THE EMPLOYERS' NET PENSION LIABILITY As of June 30,

| | 2015 | 2014 | 2013 |
|--|--|---|--|
| Total Pension Liability Plan Fiduciary Net Position Employers' Net Pension Liability | \$ 3,715,845,651 2,009,367,134 \$ 1,706,478,517 | \$ 3,650,241,741 1,957,456,213 \$1,692,785,528 | \$ 3,583,975,559 1,685,732,710 \$ 1,898,242,849 |
| Plan Fiduciary Net Position as a % of Total Pension Liability | 54.08% | 53.63% | 47.04% |
| Covered Employee Payroll | \$342,264,593 | \$336,590,797 | \$323,205,767 |
| Employers' Net Pension Liability as a % of Employee Covered Payroll | 498.58% | 502.92% | 587.32% |

SCHEDULE OF CHANGES IN THE EMPLOYERS' NET PENSION LIABILITY Year ended June 30,

| | | 2015 | | 2014 | | 2013 |
|---|----------------|---------------|-----|---|--------------------|---------------|
| Total Pension Liability | | | | | | |
| Service Cost | \$ | 45,358,095 | \$ | 44,739,603 | \$ | 44,446,279 |
| Interest on the Total Pension Liability | | 275,284,910 | | 270,525,608 | | 265,339,848 |
| Difference Between Expected and Actual exper | ience | (13,324,219) | | (17,614,321) | | (13,690,794) |
| Assumption Change | | 0 | | 0 | | 204,396,180 |
| Benefit Payments | | (236,905,323) | | (227,958,108) | | (220,623,394) |
| Refunds | | (107,395) | | (18,686) | | (29,300) |
| Disability Premiums | | (1,554,676) | | (1,531,578) | | (1,512,685) |
| Transfers to Other Retirement Systems | | (3,147,482) | | (1,876,336) | | (629,246) |
| Net Change in Total Pension Liability | | 65,603,910 | | 66,266,182 | | 277,696,888 |
| Total Pension Liability - Beginning | | 3,650,241,741 | | 3,583,975,559 | | 3,306,278,671 |
| Total Pension Liability - Ending (a) | | 3,715,845,651 | | 3,650,241,741 | | 3,583,975,559 |
| | * * | .,,, | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | |
| Plan Fiduciary Net Position | | | | | | |
| Contributions - Employer | \$ | 200,638,571 | \$ | 183,353,841 | \$ | 170,836,117 |
| Contributions - Employee | | 3,294,162 | | 2,260,563 | | 1,139,450 |
| Pension Plan Net Investment Income | | 92,645,571 | | 319,445,780 | | 198,141,088 |
| Benefit Payments | | (236,905,323) | | (227,958,108) | | (220,619,035) |
| Refunds | | (107,395) | | (18,686) | | (29,300) |
| Disabilty Premiums | | (1,554,676) | | (1,531,578) | | (1,512,685) |
| Pension Plan Administrative Expense | | (4,066,944) | | (3,736,355) | | (2,997,225) |
| Net Transfers | | (2,033,045) | | (91,954) | | (629,246) |
| Net Change in Plan Fiduciary Net Position | | 51,910,921 | | 271,723,503 | | 144,329,164 |
| Plan Fiduciary Net Position - Beginning | 1 | 1,957,456,213 | 1 | ,685,732,710 | | 1,541,403,546 |
| Plan Fiduciary Net Position - Ending (b) | | 2,009,367,134 | | ,957,456,213 | | 1,685,732,710 |
| Employers' Net Pension Liability - Ending (a) - (b) | <u>\$ 1</u> | 1,706,478,517 | \$1 | ,692,785,528 | <u> \$</u> | 1,898,242,849 |

Note: These schedules are intended to present information for 10 years, but may be built prospectively. Additional years will be displayed as they become available.

SCHEDULE OF EMPLOYERS CONTRIBUTIONS

Last 10 Fiscal Years

| | Actuarially Determined Contributions | Actual Contributions | Contribution Deficiency (Excess) | Covered Employee Payroll | Contributions as a Percentage of Employee Covered Payroll |
|------|--|-------------------------|--|--------------------------------|---|
| 2006 | \$111,271,679 | \$111,271,679 | \$0 | \$343,113,410 | 32.43 |
| 2007 | 121,243,361 | 121,243,361 | 0 | 372,140,457 | 32.58 |
| 2008 | 123,323,265 | 123,323,265 | 0 | 375,527,604 | 32.84 |
| 2009 | 122,613,975 | 122,613,975 | 0 | 379,140,306 | 32.34 |
| 2010 | 124,052,534 | 124,052,534 | 0 | 376,258,823 | 32.97 |
| 2011 | 149,952,750 | 149,952,750 | 0 | 363,345,651 | 41.27 |
| 2012 | 164,884,467 | 164,884,467 | 0 | 344,514,139 | 47.86 |
| 2013 | 170,836,117 | 170,836,117 | 0 | 329,863,134 | 51.79 |
| 2014 | 183,353,841 | 183,353,841 | 0 | 336,799,855 | 54.44 |
| 2015 | 200,638,571 | 200,638,571 | 0 | 342,211,446 | 58.63 |

SCHEDULE OF INVESTMENT RETURNS

Last 10 Fiscal Years

| Fiscal Year Ended June 30 | Annual Money-Weighted Rate of Return |
|---------------------------------|--|
| 2006 | 14.95% |
| 2007 | 18.09% |
| 2008 | -2.41% |
| 2009 | -24.70% |
| 2010 | 12.92% |
| 2011 | 21.75% |
| 2012 | 2.74% |
| 2013 | 13.38% |
| 2014 | 17.58% |
| 2015 | 6.62% |

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the dates indicated. Additional information as of the latest actuarial valuation follows:

| Valuation Date | June 30, 2015 |
|-------------------------------|---|
| Actuarial Cost Method | Entry Age |
| Amortized Method | Level Percentage of Payroll, Closed |
| Remaining Amortization Period | 16 Years (single equivalent period) |
| Asset Valuation Method | 3-Year Smoothed Market: 20% Corridor |
| Inflation | 3.0% (price inflation) |
| Actuarial Assumptions: | |
| Investment Rate of Return | |
| Projected Salary Increase | 3.5% to 11% (including 3.5% wage inflation) |
| Cost-of-Living Adjustments | |

Other Post-Employment Benefit (OPEB) Plan Schedule of Funding Progress for MoDOT and MSHP Medical and Life Insurance Plan

| Year Ended June 30 | Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL) (b) | Unfunded AAL (UAAL) (b-a) | Funded Ratio (a/b) |
|----------------------------|-------------------------------------|---|---------------------------------|--------------------------|
| 2008 | \$0 | \$1,178,303 | \$1,178,303 | 0% |
| 2010 ⁽¹⁾ | 0 | 1,036,681 | 1,036,681 | 0% |
| 2012 | 0 | 1,048,333 | 1,048,333 | 0% |
| 2014 | 0 | 857,676 | 857,676 | 0% |

⁽¹⁾ New assumptions adopted

Actuarial valuations are performed biennially. The July 1, 2013 actuarial valuation was used for FY15 and FY14 financial statements, the July 1, 2011 actuarial valuation was used for FY12 and FY13 financial statements, the July 1, 2009 actuarial valuation was used for FY10 and FY11 financial statements, and the July 1, 2007 actuarial valuation was used for FY08 and FY09 financial statements. This reporting requirement is being implemented prospectively, as prior years' data is not available.

Because this plan is an internal service fund of MoDOT, assets have not been set aside. Therefore, there is no actuarial value of assets. This results in a calculated funded ratio of zero percent.

Notes to the OPEB Schedule of Funding Progress

The information presented in the required supplementary schedule was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows:

| Valuation Date | July 1, 2013 |
|--------------------------------------|------------------|
| Actuarial Cost Method | |
| UAAL Amortization Method | |
| UAAL Amortization Period | 30 Years |
| UAAL Amortization Approach | Open |
| Investment Return (discount) Rate | |
| Healthcare Cost Trend Rate | 8.0%, Decreasing |
| | to 5% after 2017 |
| Admin Expense Trend (Inflation) Rate | 4.0% |

Supplementary Information

Schedules Of Administrative Expenses

For the Years Ended June 30, 2015 and 2014

| | 2015 | 2014 |
|-------------------------------|-------------|-------------|
| Personal Services: | | |
| Salary Expense | \$1,553,492 | \$1,208,775 |
| Employee Benefit Expense | 1,242,311 | 1,281,751 |
| Total Personal Services | \$2,795,803 | \$2,490,526 |
| Professional Services: | | |
| Actuarial Services | \$ 104,286 | \$ 122,310 |
| Audit Expense | 61,855 | 34,500 |
| Disability Program | 8,256 | 11,648 |
| Consultant Fees | 65,693 | 76,626 |
| IT Hosting and Support | 298,953 | 212,764 |
| Fiduciary Insurance | 71,402 | 65,305 |
| Other | 4,252 | 13,588 |
| Total Professional Services | \$ 614,697 | \$ 536,741 |
| Miscellaneous: | | |
| Depreciation | \$ 365,108 | \$ 370,617 |
| Meetings/Travel/Education | 99,847 | 117,751 |
| Equipment/Supplies | 51,068 | 79,091 |
| Printing/Postage | 39,882 | 64,334 |
| Bank Service Charge | 8,661 | 8,666 |
| Building Expenses | 35,025 | 39,977 |
| Other | 56,853 | 28,652 |
| Total Miscellaneous | \$ 656,444 | \$ 709,088 |
| Total Administrative Expenses | \$4,066,944 | \$3,736,355 |

Supplementary Information

Schedules Of Investment Expenses

For the Years Ended June 30, 2015 and 2014

| | 2015 | 2014 |
|---|--------------------------|-----------------------|
| Investment Income Expenses: | | |
| Management and Performance Fees | | |
| Aberdeen Asset Management ABRY Partners | \$ 18,858 984,251 | \$ 11,662 306,214 |
| Acadian Asset Management | 535,561 | 617,808 |
| Achievement Fund (formerly Peak 6) | 284,767 | 467,797 |
| AEW | 241,330 | 286,333 |
| Albourne American Infrastructure MLP | 480,000 394,012 | 360,000 226,672 |
| Alyeska | 303,385 | 0 |
| Anchorage Capital | 749,609 | 893,425 |
| Apollo Real Estate AQR Capital Management | 323,958 386,446 | 175,849 340,179 |
| Audax Group | 19,509 | 35,487 |
| Barclays Global Investors | 48,730 | 184,450 |
| Bernzott Blue Trend | 245,051 22,281 | 166,582 182,057 |
| Brevan Howard | 162,364 | 303,212 |
| Bridgewater Associates | 1,093,020 | 993,310 |
| Capital Partners CBRE | 194,634 | 178,105 |
| Cevian | 109,752 306,461 | 1,268,455 952,542 |
| Clifton | 63,297 | 96,250 |
| CarVal Investors (CVI) | (509,613) | 201,632 |
| Deephaven Capital Management EIF Management | 161 132,768 | 1,192 130,736 |
| Energy & Mineral Group Midstream Resource | 780,231 | 219,401 |
| Enhanced Investment Technologies (INTECH) | 444,946 | 458,918 |
| GMO Calab | 351,989 | 256,033 103,455 |
| Golub Grove Street Advisors | 148,341 1,375,000 | 193,455 1,500,000 |
| Gryphon | 322,850 | 164,260 |
| GSO | 484,580 | 676,890 |
| Indus ING Clarion | 774,448 468,707 | 0 439,817 |
| Kennedy | 190,410 | 437,817 |
| Koppenberg | 43,247 | 0 |
| KPS | 73,833 | 8,476 |
| Luxor M&G | 410,542 81,901 | (54,478) 6,366 |
| Metacapital | 451,200 | 249,808 |
| Millenium | 705,347 | 0 |
| Natural Gas Partners Ned Davis | 589,653 30,000 | 389,032 35,000 |
| Northern Shipping | 435,359 | 0 |
| Och-Ziff Real Estate | 813,947 | 722,212 |
| OCP Orion | 288,301 252,835 | 197,424 |
| Ospraie | 68,231 | (455,493) |
| PFM | (79,202) | 339,366 |
| Pinnacle Associates Principal Global Investors | 300,228 | 160,825 1,135,169 |
| Ridgewood | 1,158,452 328,350 | 300,000 |
| RMK Timberland | 76,058 | 119,973 |
| Rothschild Asset Management | 0 | 96,021 |
| Schroders Sciens | 0 130,000 | 5,528 0 |
| Shore | 120,000 | Ö |
| Silchester International Investors | 731,662 | 689,854 |
| Stark Investments (Shepard) Stellium | 13,359 64,244 | 21,760 545,002 |
| Structured Portfolio Management (SPM) | 04,244 | 28,316 |
| Taconic | 167,525 | 604,129 |
| Tessera Torchlight | 257,571 | 142,186 |
| Tortoise | 568,847 399,925 | 444,850 |
| Tristan | 145,675 | 0 |
| Turnbridge | 74,722 | 0 |
| Urdang ValueAct | 17,100 745,772 | 33,538 881,105 |
| Vectis | 264,106 | 168,750 |
| Western Asset Management Company | 0 | 41,578 |
| Total Management and Performance Fees | 21,660,884 | 19,145,020 |
| Investment Custodial Fee Performance Management | 59,097 140,667 | 78,703 113,821 |
| General Consultant (monitoring) Fee | 318,552 | 312,000 |
| Other Investment Expenses | 617,94 <u>5</u> | 480,718 |
| Total Investment Income Expenses | \$ 22,797,145 | <u>\$ 20,130,262</u> |
| Securities Lending Expenses: Borrower Rebates (Refunds) Bank Fees | \$ (87,411) | \$ (98,833) 92,229 |
| Total Securities Lending Expenses (Income) | 88,414 5 1,003 | \$ (6,604) |
| | | |

Supplementary Information

Schedules Of Consultant And Professional Expenses For the Years Ended June 30, 2015 and 2014

| | 2015 | 2014 |
|--|------------|-----------|
| Actuarial Services | \$ 104,286 | \$122,310 |
| Audit Services | 61,855 | 34,500 |
| Disability Administrative Services | 8,256 | 11,648 |
| Legislative Consultant | 30,000 | 30,035 |
| Customer Service and Benefit Delivery | 0 | 10,000 |
| Insurance Consultant | 6,000 | 6,000 |
| Other Consultant Fees | 29,693 | 30,591 |
| Fiduciary Insurance | 71,402 | 65,305 |
| IT Hosting and Support | 298,953 | 212,764 |
| Other | 4,252 | 13,588_ |
| Total Consultant and Professional Expenses | \$614,697 | \$536,741 |

Notes

Funding the System

The primary objective of MPERS is to provide active and retired employees with adequate retirement benefits. The investment portfolio is constructed to generate a total return that, when added to employer contributions, is sufficient to meet benefit obligations. Following prudent standards for preservation of capital, the goal is to achieve the highest possible rate of return consistent with the Plan's tolerance for risk as determined by the Board of Trustees in its role as fiduciary.

Pension plans invest assets with a long-term perspective because pension costs are spread over the working careers of plan participants. While market uncertainty brings additional risk to the investment portfolio, it's important to keep in mind that pension plans are in the business of managing risk, not simply avoiding risk. The asset allocation approved by the Board of Trustees is designed to protect the fund against the uncertainty that remains in the global economy, and should perform well across various market environments, not just when the stock market rallies.

The Board of Trustees periodically completes a review of the current asset allocation to ensure the strategies being utilized are appropriate relative to the System's return objectives and tolerance for risk. With the help of outside consultants, each and every facet of the asset allocation process is reviewed.

Guiding Investment Principles

- 1. Preserve the long-term corpus of the fund.
- 2. Maximize total return within prudent risk parameters.
- 3. Act in the exclusive interest of the members of the System.

Our Investment Beliefs

- 1. Diversification is critical because the future is unknown.
- 2. Prudent asset management must first focus on understanding and balancing risk.
- 3. Flexibility in investment policy implementation is critical, because various asset classes will be in or out of favor at different points in the economic cycle.

Important Investment Events

| September 1, 1955 | Retirement System created through the passage of Senate Bill 66. System's assets invested conservatively through United Missouri Bank (UMB). |
|--------------------|--|
| October 1, 1997 | The Board hired Rothchild Asset Management. This represented the first time MPERS employed an investment manager other than UMB. Started to diversify investment managers by hiring 7 managers over the next 4 years in addition to UMB. |
| February 1, 2003 | Hired Northern Trust as custodial bank. |
| December 1, 2003 | Hired the first Chief Investment Officer (CIO) of the retirement system. |
| 2005 - 2006 | Portfolio restructured to diversify and take advantage of opportunities in alternative asset classes such as real estate, private equity, and hedge funds. |
| September 27, 2007 | Hired the first Senior Investment Officer to assist CIO with investment portfolio. |
| September 2009 | Board adopted a 15-year accelerated funding schedule for the retiree liability. |
| June 30, 2010 | Board adopted further revisions to asset allocation to reduce risk in investment portfolio. |
| September 2011 | Completed transition to revised asset allocation targets. |
| September 25, 2014 | Board established the Rate Stabilization Reserve Fund to further reinforce funding, and protect against higher contribution rates in the future. |

Chief Investment Officer Report



MoDOT & Patrol Employees' Retirement System

Scott L. Simon Executive Director

Pam Henry Asst. Executive Director

October 5, 2015

To the Members of the MoDOT & Patrol Employees' Retirement System:

It is my pleasure to provide you with the investment section of this year's Comprehensive Annual Financial Report (CAFR). This section is a supplement to the comprehensive report and provides an overview of developments and performance within the investment portfolio.

Fiscal year 2015 marks the 60th anniversary of MPERS, and I am proud to be a part of the celebration. The system has plenty to celebrate, including the development and performance of the investment portfolio. Sixty years is a long time regardless of how you look at it, and you could easily point to any number of events as critical turning points that led us to where we are today. For the investment portfolio, it was the restructuring efforts that started roughly a dozen years ago that helped drive this year's strong performance.

The restructuring efforts were designed to help the portfolio produce consistent returns across a wide range of economic scenarios – not just when the stock market is rising. Looking back, fiscal year 2015 was an excellent test for the new portfolio, and I am pleased to report it passed with flying colors. In a year when the broad equity markets posted relatively flat returns of 0.71% and the average public fund generated a 2.82% return, MPERS' portfolio generated a 6.62% return and ranked among the best performing public funds in the country (based on fair values and time weighted rates of return). The performance pushed our investment balance to an all-time high, ending the fiscal year above the \$2 billion mark for the first time.

The performance was truly a group effort, as every major asset class delivered positive returns for the year. The private equity portfolio continues to mature nicely, and led the way with a 14.43% return for the year followed by the real estate portfolio with a 12.48% return. The fixed income, hedge fund, real assets and global equity portfolios generated returns of 6.08%, 5.20%, 3.71%, and 2.19%, respectively. Longerterm, MPERS' performance now ranks in the top 6% of our peer universe across all time periods out to ten years. Perhaps even more impressive is the fact that MPERS' has generated those results while taking less risk than our peers, as our 10-year risk profile ranks in the bottom third of the peer universe (as measured by standard deviation of returns).

What are we doing to stand out from the crowd? I would highlight three primary points:

- 1) MPERS' governance policy. MPERS' Board of Trustees has set aside any personal goals or initiatives and established a governance policy that encourages innovation. MPERS' staff and consultants are allowed to think "outside the box" and move quickly when managing the portfolio. Having a "first mover advantage" is essential in times of volatile markets and was very critical as we managed through the various market movements in fiscal year 2015.
- 2) MPERS' asset allocation. Several years ago, the Board of Trustees recognized the risk of relying on the traditional stock and bond markets to drive portfolio returns, and approved a new asset allocation that utilizes a broader set of investment strategies. With roughly half of the portfolio invested in various alternative asset classes today (outside of traditional stocks and bonds), the portfolio has other sources of return to carry the load when equity markets struggle. That was

 Office Location:
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Chief Investment Officer Report

Members of the MoDOT & Patrol Employees' Retirement System October 5, 2015 Page 2

- especially evident in fiscal year 2015, where the traditional portfolio (stocks and bonds) generated a 2.8% return, while the alternative portfolio generated a strong 10.7% return.
- 3) The Board's willingness to commit resources to the investment function. As recent as 2003, MPERS did not have a single dedicated investment staff and candidly, our performance was struggling. Fortunately, the Board recognized the need to adequately resource the investment function and we now have four dedicated investment professionals working with some of the top consulting firms in the world. We have been fortunate to have zero turnover of our internal staff, and each and every staff member holds either a Chartered Alternative Investment Analyst (CAIA) or Chartered Financial Analyst (CFA) designation. Collectively, it is a very cohesive group that individually challenges each other to generate new ideas and find more effective techniques to manage the investment portfolio.

MPERS' performance in fiscal year 2015 was excellent from a relative return perspective, but we are also mindful that it fell short of our actuarial target of 7.75%. Fortunately, our three year return (the most important for determining contribution rates) stands well above that target at 12.45%. Rather than taking those gains and allowing contribution rates to drop, the Board of Trustees opted to keep contribution rates constant and establish a stabilization fund to offset years when experience falls short of our goals. I commend the Board for making this decision, as it demonstrates a true alignment of interest with our members.

As we look ahead to fiscal year 2016, the establishment of the stabilization fund looks very wise as the events that led to muted returns in the traditional stock and bond markets continue to be a headwind for performance. Equity valuations remain near the high end of historical ranges, cash rates are still at zero, and longer term government bonds are yielding between two and three percent. The markets have provided healthy returns since recovering from the financial crisis, but it remains to be seen if the global economy is strong enough to grow without another round of government support and stimulus. All of this reinforces the need to temper return expectations going forward, and maintain the innovative and forward-looking approach that served us so well over the past few years. Continuing to build on the key elements of MPERS' recent success, along with the continued support from our Board of Trustees, will be critical in managing through the period of low returns that potentially lies ahead.

Thank you for the opportunity to serve as your Chief Investment Officer, and I hope you enjoy this year's annual report.

Sincerely,

Larry Krummen, CFA

Investment Consultant Report



KEVIN M. LEONARDPARTNER

October 2015

The Board of Trustees

MoDOT & Patrol Employees' Retirement System
PO Box 1930
Jefferson City, MO 65102

Dear Board Members:

In our role as the general investment consultant, we assist the Board in several manners: determining and executing the overall asset allocation strategy of the Plan; advising on the investment policy of the Plan; facilitating investment manager searches (both traditional and alternative asset classes); conducting custodial service searches; providing ongoing performance evaluation for each individual investment manager and the overall investment portfolio; as well as providing pertinent education to the Board.

MPERS' objective is to provide service, disability, death and vested retirement benefits to members and their beneficiaries. To ensure a solid foundation for the future of the System, MPERS has developed an investment program designed to achieve the actuarially assumed rate of return over the long term, while prudently managing the risk of the portfolio. The pension fund is required to satisfy the need to pay accumulated/earned retirement benefits today, while at the same time be prepared for "uncertain" future benefits. This balancing of short-term versus long-term needs is a key tenant in the overall construction of the portfolio. To facilitate this balance, the Board has adopted a diversified asset allocation structure. Our goal is to diversify the System's assets within the traditional and non-traditional asset classes to reduce volatility, achieve above market returns, and to better protect the portfolio against difficult market conditions.

MPERS Fiscal Year 2015 Performance and Key Initiatives

For the fiscal-year-ending June 30, 2015, the MPERS Total Fund returned 6.6% on a net-of-fees basis. For the fiscal-year-ending June 30, 2015, relative to the peer group comparison (InvestorForce Public Fund Universe), MPERS ranked as the best performing Public Fund with its 6.6% return. Total fund performance for the fiscal year was driven by strong absolute returns of the Plan's Real Estate, Private Equity and Opportunistic Debt portfolios. On a relative basis, the Global Equity and Core Fixed Income managers outperformed their respective benchmarks.

During Fiscal Year 2015, key initiatives accomplished include:

- Conducted a comprehensive review of the Plan's asset allocation in concert with NEPC's 2015 Client Actions and Asset Class Assumptions.
 - As part of the review, NEPC and Staff evaluated the Plan's existing asset allocation and discussed any potential changes to its current structure.
 - Based on the review and discussions, NEPC and Staff recommended that no changes be made to the current investment target allocation as the existing asset allocation remains suitable.

255 State Street | Boston, MA 02109 | TEL: 617.374.1300 | www.nepc.com BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | SAN FRANCISCO

Investment Consultant Report



- Continued the expansion of MPERS' alternative investment program, which resulted in strong absolute returns for the fiscal year and a further diversification of MPERS' portfolio
 - A private market pacing plan was updated for the opportunistic debt, private equity, real assets, and real estate portfolios. Each pacing plan provided a recommended commitment amount for upcoming vintage years and allocations to specific strategy types.
 - New strategies/managers were hired within the opportunistic debt, private equity, real assets, and real estate portfolios
- Staff and NEPC, in concert with the Plan's actuary, conducted an Asset-Liability study in an effort to review asset and liability projections for the Plan. Additionally, a Liquidity study was conducted to evaluate the Plan's liquidity in different economic environments.
 - The results of the Asset-Liability study projected the Plan's funded status to increase significantly over the next decade however, the Plan's long term assumed rate of return of 7.75% is not projected to be met over the next 5-7 years due to lower expected returns across several asset classes. However, the current allocation is expected to meet the Plan's long-term target based on NEPC's longer-term assumptions.
 - The results of the Liquidity study reaffirmed that the Plan's liquidity remains healthy enough to support the current allocation to alternative investments but certain economic environments may change the liquidity profile of the Plan meaningfully.

As the asset allocation strategy evolves year after year, diversification and risk mitigation will continue to be the pillars of MPERS' asset allocation structure.

NEPC, LLC appreciates the opportunity to serve as your consultant. It is a pleasure to work with MPERS and we look forward to continuing our relationship for the benefit of the Board, Staff, and most importantly, the members of the System.

Sincerely,

Kevin M. Leonard

Partner

Summary of Investment Policy

The primary objective of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS) is to provide active and retired employees with the retirement benefits provided under Missouri law. The investment portfolio is constructed to generate a total return that, when added to employer contributions, is sufficient to meet these benefit obligations. Following prudent standards for preservation of capital, the goal is to achieve the highest possible rate of return consistent with the plan's tolerance for risk as determined by the Board of Trustees in its role as fiduciary.

Investment management is delegated to MPERS' staff and external asset managers. The managers operate within the guidelines, objectives and constraints set forth in their respective investment management agreement.

Fair Value of Investments

As of June 30, 2015, MPERS' investment portfolio had a total fair value of \$2 billion, representing an increase of \$86 million from fiscal year-end 2014. Over the course of the year, an additional \$41 million was transferred

out of the fund to meet benefit payments and other obligations. When viewed together, the net increase to the portfolio from investment activity equated to \$127 million.

Investment Performance

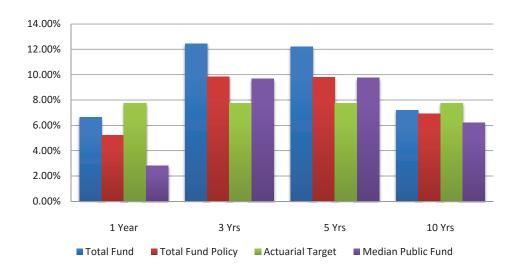
Fiscal year 2015 was another excellent year for MPERS' investment portfolio from a relative return perspective. The fund generated a 6.62% return for the year, net of all management fees and based on time-weighted rates of return and market valuations. Despite falling short of the 7.75% actuarial return target, MPERS' one year return was among the best performing public funds in the peer universe. Every major asset class delivered positive returns for the year, led by the private equity portfolio with a 14.43% return and the real estate portfolio with a 12.48% return. The fixed income, hedge fund, real assets, and global equity portfolios generated returns of 6.08%, 5.20%, 3.71%, and 2.19%, respectively. Additional information on the performance across the major asset classes (and their respective benchmarks) is listed in the following chart.

| (Including Benchmarks) | 1-Year | 3-Year | 5-Year | 10-Year |
|------------------------|--------|--------|--------|---------|
| Total Fund | 6.62% | 12.45% | 12.21% | 7.20% |
| Policy Benchmark | 5.22 | 9.85 | 9.78 | 6.91 |
| Global Equity | 2.19 | 15.68 | 14.17 | 7.57 |
| MSCI ACWI | 0.71 | 13.01 | 11.93 | 6.41 |
| Private Equity | 14.43 | 16.61 | 14.91 | n/a |
| S&P 500 + 300 bps | 16.09 | 19.56 | 17.86 | n/a |
| Fixed Income | 6.08 | 6.71 | 7.58 | 6.06 |
| Barclays US Universal | 1.61 | 2.33 | 3.81 | 4.68 |
| Real Estate | 12.48 | 15.97 | 15.84 | 6.34 |
| NFI-ODCE | 13.65 | 11.93 | 13.28 | 5.63 |
| Real Assets | 3.71 | n/a | n/a | n/a |
| CPI + 400 bps | 4.11 | n/a | n/a | n/a |
| Hedge Funds | 5.20 | 7.67 | 6.66 | n/a |
| HFRI Fund of Funds | 3.95 | 6.27 | 4.10 | n/a |
| | | | | |

When evaluating performance, the Board of Trustees looks at three primary performance objectives: a) to meet or exceed the actuarial assumed rate of return of 7.75%, b) to outperform a policy benchmark that represents the return that could be achieved by investing passively in the broad markets in the same percentages to MPERS' target asset

allocation, and c) to rank at or above the median public fund investment return.

Historical returns versus the three primary performance goals are listed graphically in the following chart.



While MPERS' one year return fell slightly short of the actuarial target, MPERS' three and five year performance remains safely above the actuarial target. The ten year results have also improved, but remain slightly below the 7.75% target. The fund continues to perform well relative to policy benchmarks across all measurement periods. Performance relative to our public fund peer universe remains very strong as well. As of June 30, 2015, the portfolio ranked in the top 6% of the public fund peer universe for the one, three, five, and ten year periods.

Asset Allocation Overview

There were no revisions to MPERS' asset allocation targets in fiscal year 2015.

As of June 30, 2015, all of the sub-asset class allocations were within the acceptable ranges established by MPERS' investment policy. Any deviance relative to the target allocation represents a conscious decision based on our views of the market. The chart below lists the target and actual asset allocation as of June 30, 2015, followed by commentary on each of the underlying asset classes.

| Asset Class | Ending FY14 Allocation | FY15 Target Allocation | Ending FY15 Allocation |
|----------------|------------------------|------------------------|---------------------------|
| Global Equity | 31.42% | 30% | 29.66% |
| Private Equity | 18.34% | 15% | 18.74% |
| Fixed Income | 22.05% | 25% | 22.35% |
| Real Assets | 4.94% | 5% | 5.06% |
| Real Estate | 12.27% | 10% | 11.30% |
| Hedge Funds | 10.58% | 15% | 12.14% |
| Cash | 0.40% | 0% | 0.75% |

Global Equity:

MPERS began the year with a 31.42% allocation to global equities, representing a modest overweight versus the targeted allocation of 30%. We maintained the overweight throughout most of fiscal year 2015, but made a number of re-balancing moves throughout the year to reflect the changing market conditions across geographic regions

and strategies. One area of concern was our allocation to master limited partnerships (MLPs), which started the year at \$70 million, or 3.6% of assets. MLPs traded lower throughout most of the year following the selloff in the broader commodity markets. As volatility increased in the sector, we liquidated a portion of the portfolio and ultimately reduced the allocation to \$38 million invested or 1.9% of

assets by the end of the year. We also reduced our exposure to emerging market equities back to a neutral position relative to the benchmark, as slowing growth in China and the falling commodity markets put additional pressure on those markets as well. The reduction to MLPs and emerging market equities was offset by higher allocations to U.S. and developed international markets. As the fiscal year came to an end, the combination of falling global growth and the Federal Reserve's talk of rising interest rates led to another rebalancing of the equity portfolio, and moved to a neutral weighting relative to policy benchmarks, ending the year with a 29.66% allocation to equities.

Despite continued low interest rates and the massive amount of liquidity in the market, equities struggled to generate any momentum throughout the year with the broad equity indices generating a 0.71% return. MPERS' portfolio performed well on a relative basis, generating a 2.19% return and outperforming the equity benchmark by 1.48%. That performance looks even better after factoring in the performance of MPERS' allocation to master limited partnerships (MLPs), which fell 14.4% during the year. The underperformance in MLPs was more than offset by the strong performance of MPERS' domestic and international equity portfolio, both of which outperformed by their respective benchmarks by wide margins.

Fixed Income:

We began fiscal year 2015 with a 22.05% allocation to fixed income relative to the 25% target, maintaining the view that income-oriented strategies in the real estate sector were more attractive than traditional fixed income. While we ended the year with a 22.35% allocation, essentially unchanged from the start of the year, we made a number of significant allocation shifts within the fixed income market. Our internal fixed income portfolio can be broken down in three primary sectors: a) inflation protection securities or bonds that do relatively better in rising rate environments, b) long duration securities that perform well when rates fall and provide diversification in cycles of falling economic growth, and c) core fixed income holdings that generating a steady portfolio yield. After a thorough analysis of our entire internal portfolio, we identified a number of holdings that had either dropped in yield or shortened to a duration that no longer served a valuable role in the portfolio. Throughout the year, we sold a number of the "in-between" securities and offset the trades by increasing exposure to the long duration portfolio, especially after the spike in rates sent yields in longer-term government debt above 4%.

The fixed income portfolio performed very well relative the benchmark throughout the year, generating a 6.08% return versus the index return of 1.61% (representing excess return of 4.47%). MPERS' internal fixed income portfolios continue to perform well across all measurement periods,

but the majority of the outperformance came from MPERS' opportunistic debt portfolio which generated a 12.88% return for the year. The opportunistic debt sector remains attractive from a relative value perspective, and fiscal year 2015 was another active vintage year for new commitments in that space. The changing regulatory environment continues to put pressure on the balance sheets of traditional lenders, which limits their ability to create new loans. This has led to an opportunity for institutional investors to step in and "fill the void" left by traditional lenders. Throughout the fiscal year, we made a number of new commitments along this theme, with the expectation of increasing our targeted allocation to opportunistic debt to 7.5% of total assets.

<u>Hedge Funds:</u>

MPERS' remained considerably underweight the targeted hedge fund allocation of 15% throughout the year, starting the year with a 10.58% allocation and ending with a 12.14% allocation. We continue to favor opportunities in the real estate, real assets, and private equity portfolios relative to the hedge fund sector.

We made a couple of minor changes to the manager lineup throughout the year, adding an additional equity market neutral strategy, a new commodity strategy, a new global multi-strategy strategy, and an Asia Pacific equity strategy. The hires were offset by liquidating investments from underperforming managers. Overall the portfolio generated a return of 5.20% during the year, which outperformed the benchmark return of 3.95% (representing 1.25% of excess return).

Real Assets:

The real assets portfolio generated a return of 3.71% versus a policy benchmark of 4.94% (representing 0.40% of underperformance). The underperformance was driven by MPERS' energy focused funds which make up roughly 50% of the real assets portfolio. We were very pleased with how the portfolio held together in a year when oil and gas markets saw prices plunge roughly 40% on the year.

Despite the difficult performance in the energy sector, the allocation to real assets increased from 4.59% to 5.06% throughout fiscal year 2015, versus a policy target of 5%. It was an active year for new commitments in the sector, as we added several new relationships to complement the exposure in the energy sector. New commitments include an investment in a mine financing fund, aircraft leasing fund, a seaborne shipping fund and a follow on fund to an existing energy exploration fund. Two of MPERS' best performing energy funds were also back in the market with their new funds, and we committed additional capital to their offerings as well. The new investments were offset by a reduction to the timber portfolio, which ended the year with an allocation

of \$7.5 million or 0.4% of assets. We continue to liquidate the majority of the timber portfolio, primarily by harvesting our remaining timber tracts (deeds) in Texas and Arkansas. Overall, we continue to see a lot of opportunities in the real assets sector, and expect the allocation will drift towards 7-7.5% of assets as the new strategies and investments are implemented.

Real Estate:

MPERS' real estate portfolio has a target allocation of 10% of assets, and includes a mix of public and private equity strategies, along with tactical exposures to public and private debt strategies. We continue to find excellent relative value opportunities in real estate debt strategies, as traditional lenders (primarily banks) have exited the sector following the financial crisis. The portfolio generated a 12.48% return in fiscal year 2015, which underperformed the benchmark return of 13.65% (representing 1.17% of underperformance). New commitments for the year include a follow-on commitments to three of MPERS' best performing private equity real estate managers. We continue to overweight real estate strategies on the view that core real estate will outperform traditional fixed income markets, and ended fiscal year 2015 with an 11.30% allocation.

MPERS' now has over a ten year track record within the real estate sector, and while performance has been strong on both an absolute and relative basis, we have seen mixed results with closed-end, blind pool investments in the value added and opportunistic real estate sectors. The typical "private equity" model of committing capital across each vintage year has simply not worked well over the trailing 10 year period. MPERS successful performance is primarily attributed to well-timed moves and the tactical positioning of the portfolio throughout the financial crisis (the decision to pull from private equity core real estate and allocate to public Real Estate Investment Trusts (REITs) and Commercial Mortgage Backed Securities (CMBS) have served MPERS particularly well). Going forward, we are focused on building deeper relationships with the managers and strategies that have performed the best over the past 10 years. Staff is focused on strategies that offer excellent transparency into the underlying investments, and preferably strategies that charge fees only on invested capital.

Private Equity:

MPERS' private equity allocation slightly increased from 18.34% of assets to 18.74% of assets during the course of fiscal year 2015, versus the target of 15%. The portfolio generated a 14.43% return for the year, trailing the "public equity plus" benchmark (S&P 500 + 3%) which generated a 16.09% return (1.66% of underperformance). This benchmark has been difficult to outperform in recent years given the strength of public equity markets and the relative

immaturity of MPERS' private equity portfolio. The portfolio continues to mature and work its way through the J-curve, and we remain optimistic that relative performance will improve in the coming years. On an absolute return basis, the private equity portfolio was the best performing asset class in fiscal year 2015, as well as the trailing 3-year period.

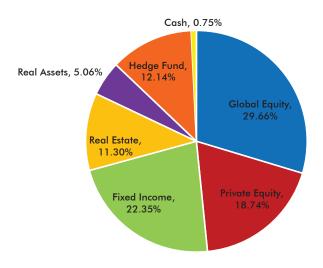
MPERS' continues to add resources and increase our knowledge of private equity and the underlying fund universe. MPERS now has a dedicated manager of private equity and hedge funds to focus on sourcing direct manager relationships versus allocating through a fund-of-funds platform. With the assistance of external consultants, we believe MPERS can successfully administer the private equity portfolio without the extra layer of fees associated with a fund-of-funds. Similar to the real assets program, we are focused on building deeper relationships with the managers and strategies that have performed well for us, strategies that offer excellent transparency into the underlying investments, and preferably strategies with attractive fee structures to mitigate the J-curve impact. Over the course of the year, we made allocations to two small/midcap buyout funds, a healthcare buyout strategy, and a Chinese debt strategy.

Looking Forward

After several strong years of returns following the financial crisis, the traditional stock and bond markets were only able to generated muted returns in fiscal year 2015. In this environment, MPERS' efforts to restructure and diversify the portfolio proved to be a very good decision. In a year when the broad equity markets posted relatively flat returns of 0.71% and the average public fund generated a 2.6% return, MPERS' portfolio generated a 6.62% return and ranked among the best performing public funds in the country. We also reached a new milestone in our fund balance, ending the fiscal year above the \$2 billion mark for the first time.

As we look forward, equity and credit valuations remain at the high end of their historical ranges, and fiscal year 2016 will likely see the Federal Reserve raise cash rates for the first time since 2004. It remains to be seen if the economy is strong enough to grow without another round of quantitative easing or government stimulus. All of this reinforces the need to be realistic about return prospects going forward, and maintain the forward-looking approach that has served us well over the past few years. The need to think "outside the box" and look for unique opportunities with attractive entry points will be even more important in managing the period of low returns that potentially lies ahead.

Investment Summary



Amounts Reported by Management-Type Allocation

| | 06/30/2014 | | _ | | | 2015 | |
|-------------------|---------------|---------------|--------------|---------------|---------------|---------------|--------------------|
| | Book Value | Fair Value | Acquisitions | Dispositions | Book Value | Fair Value | % of Fair Value |
| Global Equity | 432,764,207 | 609,018,735 | 180,138,346 | (146,386,107) | 466,516,446 | 594,235,478 | 29.66% |
| Private Equity | 306,482,066 | 355,403,063 | 73,521,100 | (49,863,154) | 330,140,012 | 375,442,842 | 18.74% |
| Fixed Income | 384,875,937 | 427,312,960 | 171,282,242 | (145,246,188) | 410,911,991 | 447,873,258 | 22.35% |
| Real Estate | 211,255,653 | 237,873,877 | 68,253,110 | (75,519,271) | 203,989,492 | 226,447,261 | 11.30% |
| Real Assets | 72,339,959 | 95,835,897 | 38,378,681 | (18,962,557) | 91,756,083 | 101,447,940 | 5.06% |
| Hedge Funds | 159,433,963 | 205,042,431 | 43,897,768 | (13,119,453) | 190,212,278 | 243,219,419 | 12.14% |
| Cash | 7,749,332 | 7,749,416 | 400,343,622 | (392,990,049) | 15,102,905 | 15,103,031 | 0.75% |
| Total Investments | 1,574,901,117 | 1,938,236,379 | 975,814,869 | (842,086,779) | 1,708,629,207 | 2,003,769,229 | 100.00% |

Reconciliation to Statement of Plan Net Assets:

Less Accrued Investment Interest and Income Less Investment Sales Receivable Plus Investment Purchases Payable Currency Adjustment (4,264,812) (10,567,358) 2,292,650 166,689 \$1,991,396,398

Largest Investment Holdings

Largest Equity Securities

(Non-Commingled Funds)

| Security | Fair Value | % of Total | |
|-----------------------------------|------------|------------|--|
| APPLE INC COM STK | 2,847,148 | 0.142 | |
| REGENERON PHARMACEUTICALS INC COM | 2,142,546 | 0.107 | |
| QORVO INC COM | 1,914,038 | 0.096 | |
| ROYAL CARIBBEAN CRUISES COM STK | 1,888,560 | 0.094 | |
| LAM RESH CORP COM | 1,854,780 | 0.093 | |
| TOTAL SYS SVCS INC COM | 1,658,269 | 0.083 | |
| MASIMO CORP COM STK | 1,580,592 | 0.079 | |
| SYNOPSYS INC COM | 1,514,435 | 0.076 | |
| FTI CONSULTING INC COM | 1,472,268 | 0.073 | |
| SP PLUS CORP COM | 1,462,160 | 0.073 | |

Largest Fixed Income Securities

(Non-Commingled Funds)

| Par Value | Security | Fair Value |
|--------------|--|--------------|
| \$14,000,000 | USA TREASURY NTS 1.125% TIPS 15/1/21 | \$16,015,298 |
| 18,937 | MFB NT COLLECTIVE GOVERNMENT/CREDIT BOND INDEX FUND - LENDING | 11,683,781 |
| 98,547,108 | I/O GNMA 2013-H13 REMIC CL HI VAR RT DUE05-20-2063 | 10,819,388 |
| 10,000,000 | PVTPL SLM STUD LN TR 2003-11 STUD LN BKDSECS 144A A-6 VAR RT DUE 12-15-25 | 9,986,980 |
| 10,000,000 | FFCB DTD 2.93 04-27-2029 | 9,584,000 |
| 6,000,000 | UNITED STATES TREAS BDS INDEX LINKED 1.75 DUE 01-15-2028 REG | 7,675,640 |
| 7,034,454 | SLM STUDENT LN TR PVTPL SER 2004-8A CL A5 FLT RT DUE 04-25-2024 | 7,041,312 |
| 5,750,000 | TVA 6.235 BD DUE 07-15-2045 ONE-TIME OPTPUT PAY 7-15-2001 @ PAR LAST NOTF 1**PUT | 6,748,775 |
| 54,627,568 | I/O GNMA 2013-H13 REMIC CL JI VAR RT DUE06-20-2063 REG | 6,094,388 |
| 5,748,379 | FNMA REMIC TR 2013-56 CL-GM 2 08-25-2041 | 5,604,462 |
| 5,500,000 | CMO CR SUISSE COML MTG TR SER 2006-C4 SER 2006-C4 CL-AJ DUE 09-15-2039 REG | 5,583,496 |
| 7,140,000 | CMO WACHOVIA BK COML MTG TR COML MTG PASS-TH DUE 12-15-2043 REG | 5,488,604 |
| 121,031,322 | I/O GNMA 2012-H05 REMIC PASS THRU CTF CLAI VAR RT 03-20-2062 | 5,476,788 |
| 5,326,096 | GOAL CAP FLTG RT SER 2006-1 CL A-3 11-25-2026 | 5,290,262 |
| 5,000,000 | CMO LB UBS COML MTG TR 2007 C7 MTG PASS THRU CTF CL CL B DUE 09-15-2045 REG | 5,055,145 |
| 4,000,000 | UNITED STATES TREAS BDS DTD 02/15/2006 4.5% DUE 02-15-2036 REG | 5,029,376 |
| 5,000,000 | CREDIT SUISSE FIRST BOSTON MTG SECS CORP2005-C4 MTG PASSTHRU CTF CL B 15 AUG 38 | 4,996,225 |
| 5,000,000 | FFCB 3.89% DUE 06-01-2043 | 4,896,850 |
| 5,000,000 | FEDERAL HOME LN BKS CONS BD 3 11-15-2027 | 4,823,850 |
| 5,000,000 | NORTHSTAR ED FIN INC DEL SER 2007-1 CL A-4 01-29-2046 BEO | 4,821,010 |

Space and cost restrictions make it impractical to print the entire investment portfolio in this report. However, a portfolio listing is available for review in the office of the executive director of MPERS.

Schedule of Investment Expenses

| | Fair Value of Assets Under Management at 6/30/2015 | Fees Accrued During FY15 |
|--|---|-----------------------------|
| Management and Performance Fees: | | |
| Cash | \$ 15,102,920 | \$ 0 |
| Cash/S&P 500 Futures Internal Fixed Income | 107,966,685 238,618,374 | 0 0 |
| Internal US Tips | 25,104,034 | 0 |
| NT Gov Credit | 11,683,805 | 0 |
| Recoverable Taxes | 439,903 25,437,546 | 0 18,858 |
| Aberdeen Asset Management ABRY Partners | 9,326,299 | 984,251 |
| Acadian Asset Management | 65,279,076 | 535,561 |
| Achievement Fund (formerly Peak 6) | 24,918,120 | 284,767 241.330 |
| AEW Albourne | 7,568,724 0 | 480,000 |
| American Infrastructure MLP | 22,315,618 | 394,012 |
| Alyeska | 15,701,726 | 303,385 |
| Anchorage Capital Apollo Real Estate | 11,325,345 13,399,009 | 749,609 323,958 |
| AQR Capital Management | 898,484 | 386,446 |
| Audax Group | 827,180 | 19,509 |
| Barclays Global Investors Bernzott | 0 31,103,727 | 48,730 245,051 |
| Blue Trend | 9,910,461 | 22,281 |
| Brevan Howard | 15,576,966 | 162,364 |
| Bridgewater Associates Capital Partners | 18,704,631 5,301,439 | 1,093,020 194.634 |
| CBRE | 18,732,284 | 109,752 |
| Cevian | 12,750,371 | 306,461 |
| Clifton | 0 2,798,500 | 63,297 0 |
| Colony Capital CarVal Investors (CVI) | 21,398,898 | (509,613) |
| Deephaven Capital Management | 0 | ` 161 |
| EIF Management | 8,398,091 | 132,768 |
| Energy & Mineral Group Midstream Resource Enhanced Investment Technologies (INTECH) | 23,289,430 94,493,041 | 780,231 444,946 |
| GMO | 31,181,000 | 351,989 |
| Golub | 25,300,549 | 148,341 |
| Grove Street Advisors Gryphon | 342,533,902 50,431,379 | 1,375,000 322,850 |
| GSO | 10,689,867 | 484,580 |
| Indus | 12,384,910 | 774,448 |
| ING Clarion | 64,649,494 | 468,707 |
| Kennedy Koppenberg | 22,170,225 10,010,334 | 190,410 43,247 |
| KPS | 1,027,212 | 73,833 |
| Luxor | 16,602,329 | 410,542 |
| M&G Metacapital | 8,810,985 11,145,953 | 81,901 451,200 |
| Millenium | 16,646,749 | 705,347 |
| Natural Gas Partners | 25,844,688 | 589,653 |
| Ned Davis Northern Shipping | 0 13.575.442 | 30,000 435,359 |
| Och-Ziff Real Estate | 14,084,396 | 813,947 |
| OCP | 11,644,717 | 288,301 |
| Orion Ospraie | 1,256,614 2,050,050 | 252,835 68,231 |
| PFM | 13,053,767 | (79,202) |
| Pinnacle Associates | 38,076,840 | 300,228 |
| Principal Global Investors | 123,521,157 | 1,158,452 |
| Ridgewood RMK Timberland | 3,944,786 7,585,725 | 328,350 76,058 |
| Sciens | 6,221,415 | 130,000 |
| Shore | 408,075 | 120,000 |
| Shoreline Silchester International Investors | 3,080,210 114,480,784 | 731,662 |
| Stark Investments (Shepard) | 502,021 | 13,359 |
| Stellium | 13,874,753 | 64,244 |
| Taconic Tessera | 18,177,434 10,707,687 | 167,525 257,571 |
| Torchlight | 15,420,024 | 568,847 |
| Tortoise | 38,081,173 | 399,925 |
| Tristan | 6,973,515 | 145,675 |
| Turnbridge Urdang | 1,651,623 1,530,091 | 74,722 17,100 |
| ValueAct | 13,469,044 | 745,772 |
| Vectis Total Management and Performance Fees | 10,224,692 \$1,991,396,298 | \$ 21,660,884 |
| Other Investment Expenses: | | |
| Investment Custodial Fee | | 59,097 |
| Performance Management | | 140,667 |
| General Consultant (monitoring) Fee Other Investment Expenses | | 318,552 617.945 |
| Total Investment Income Expenses | | \$ 22,797,145 |
| · | | |
| Securities Lending Expenses: Borrower Rebates (Refunds) | | \$ (87,411) |
| Bank Fees | | 88,414 |
| Total Securities Lending Expenses (Income) | | \$ 1,003 |

Schedule of Brokerage Commissions

| Brokerage Firm | Total Commission | Number of Shares | Commission Rate |
|---|---------------------|--------------------|--------------------|
| KNIGHT EQUITY MARKETS LP | \$ 25,749 | 1,630,775 | 0.0158 |
| J.P. MORGAN | 15,254 | 954,400 | 0.0160 |
| UBS | 13,788 | 966,631 | 0.0143 |
| WEEDEN AND & CO | 12,382 | 525,459 | 0.0236 |
| JEFFERIES & COMPANY | 11,892 | 566,774 | 0.0210 |
| ROSENBLATT SECURITIES LLC 501 | 10,264 | 383,293 | 0.0268 |
| INSTINET | 9,263 | 377,540 | 0.0245 |
| JONESTRADING INST SERV | 8,846 | 3,946,887 | 0.0022 |
| BNY ESI SECURITIES CO. | 8,563 | 233,079 | 0.0367 |
| CREDIT SUISSE AG, NEW YORK BRANCH | 8,364 | 9,740,159 | 0.0009 |
| SG COWEN AND COMPANY | 8,047 | 334,275 | 0.0241 |
| GUZMAN AND COMPANY | 6,968 | 272,242 | 0.0256 |
| WM SMITH AND COMPANY | 6,697 | 250,819 | 0.0267 |
| DEUTSCHE BANK SECURITIES INC | 6,242 | 575,552 | 0.0108 |
| BERNSTEIN, SANFORD C. & CO | 5,346 | 187,133 | 0.0286 |
| CITIGROUP GLOBAL MARKETS INC. | 5,056 | 5,234,475 | 0.0010 |
| CAP INSTITUTIONAL SERVICES INC | 4,753 | 166,447 | 0.0286 |
| CITATION GROUP | 4,338 | 120,305 | 0.0361 |
| WELLS FARGO BANK | 3,214 | 403,888 | 0.0080 |
| BAYPOINT TRADING LLC | 2,980 | 94,198 | 0.0316 |
| CANTOR FITZGERALD & CO | 2,636 | 5,471,948 | 0.0005 |
| GOLDMAN SACHS & COMPANY | 2,635 | 289,777 | 0.0091 |
| KNIGHT DIRECT LLC | 2,287 | 457,088 | 0.0050 |
| STIFEL NICOLAUS & CO, INC | 2,258 | 52,183,896 | 0.0000 |
| MERRILL LYNCH | 2,222 | 3,201,667 | 0.0007 |
| SIDOTI & COMPANY LLC | 2,006 | 61,042 | 0.0329 |
| RAYMOND JAMES AND ASSOCIATES | 1,624 | 401,025 | 0.0040 |
| STEPHENS INC | 1,438 | 41,524 | 0.0346 |
| MORGAN STANLEY & CO | 1,307 | 6,942,485 | 0.0002 |
| KEEFE BRUYETTE AND WOODS INC. | 1,264 | 38,590 | 0.0328 |
| ROBERT W. BAIRD & COMPANY INC | 1,068 | 30,157 | 0.0354 |
| CLSA AUSTRALIA PTY LTD | 1,008 | 268,346 | 0.0038 |
| BARCLAYS BANK | 1,002 | 1,261,235 | 0.0008 |
| OTHER (46 firms less than \$1,000 each) | 14,735 | 235,047,909 | 0.0001 |
| Total | <u>\$ 215,496</u> | <u>332,661,020</u> | |
| Average Commission Rates | | | 0.0006 |

Notes

Contributions to the System

In the initial negotiations, it was agreed the new retirement system would be funded by contributions from both the employees of MoDOT & the Highway Patrol, as well as the employers themselves. The initial contribution rate for employees and employers was legislatively set at 4%. In the late 1970s, legislation was passed transforming MPERS to a non-contributory plan for members. All employee contributions, plus interest, were refunded.

Today, the Closed Plan and Year 2000 Plan remain non-contributory for employees. However, effective January 1, 2011, pension reform legislation was enacted to create the 2011 Tier, which brought back employee contributions (still 4%, the original rate set back in 1955) for anyone hired by the state in a benefit-eligible position (for the first time) on or after January 1, 2011.

Important Contribution Events

| September 1, 1955 | Employee and employer rate equal to 4% of employee's first \$7,500 of pay. |
|--------------------|---|
| November 1, 1965 | Raised to first \$10,000 of pay. |
| October 13, 1969 | Raised to first \$15,000 of pay. |
| August 13, 1972 | Employee and employer rate changed to 5.1% of pay (no salary limit). |
| August 13, 1976 | Employee contribution eliminated - employee contributions and interest returned at retirement. |
| September 29, 1979 | Contribution and interest returned to those who were still living and retired prior to 8/13/1976. |
| February 14, 1980 | Contributions and interest returned to active members. |
| May 12, 1981 | Contributions returned to vested members who left state employment prior to 9/1/1976. |
| January 1, 2011 | Contributory 2011 Tier became effective for new hires - employee contribution rate is 4% of pay. |

Actuary's Certification Letter

GRS

Gabriel Roeder Smith & Company Consultants & Actuaries One Towne Square Suite 800 Southfield, MI 48076-3723 248.799.9000 phone 248.799.9020 fax www.gabrielroeder.com

September 16, 2015

The Retirement Board
Missouri Department of Transportation
and Highway Patrol Employees' Retirement System
1913 William Street
Jefferson City, Missouri 65102-1930

Ladies and Gentlemen:

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. This report should not be relied on for any purpose other than the purpose described.

The basic financial objective of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS) is to establish and receive contributions which:

- (1) when expressed in terms of percents of active member payroll, will remain approximately level from generation to generation of Missouri citizens, and
- (2) when combined with present assets and future investment returns, will be sufficient to meet the present and future financial obligations of MPERS.

In order to measure progress toward this fundamental objective, MPERS has annual actuarial valuations performed. The valuations (i) measure present financial position, and (ii) establish contribution rates that provide for the current cost and level percent-of-payroll amortization of unfunded actuarial liabilities over a reasonable period. An actuarial valuation was performed based upon benefit conditions, data and assumptions as of June 30, 2015. This valuation indicates that contribution rates for the period beginning July 1, 2016 that are at least equal to the calculated contributions rates will meet the Board's financial objective. The calculated contribution rates are 58.00% of payroll for the 6,114 Non-Uniformed employees and 58.00% of payroll for the 1,244 Uniformed patrol employees.

The plan administrative staff provides the actuary with data for the actuarial valuation. The actuary relies on the data after reviewing it for internal and year to year consistency. Member data was not otherwise audited by the actuary. The actuary summarizes and tabulates population data in order to analyze longer term trends. We are not responsible for the accuracy or completeness of the data provided by MPERS.

Actuary's Certification Letter

The Retirement Board September 16, 2015 Page 2

Legislative Changes

Gabriel, Roeder, Smith & Company was responsible for the following schedules found in the Actuarial Section:

Summary of Actuarial Assumptions and Methods
Probabilities of Separation From Active Employment
Individual Salary Increases
Joint Life Retirement Values
Probabilities of Retirement for Members
Probabilities of Disability for Members
Summary of Member Data Included in Valuations
Active Members by Attained Age and Years of Service
Schedule of Active Member Valuation Data
Solvency Test
Derivation of Financial Experience
Schedule of Retirees and Beneficiaries Added and Removed
Summary of Plan Provisions

Gabriel, Roeder, Smith & Company was responsible for the following schedules found in the Financial Section:

Schedule of Changes in the Employer's Net Pension Liability Schedule of Employer's Net Pension Liability Schedule of Employer Contributions Schedule of the Actuarially Determined Contributions

Actuarial valuations are based upon assumptions regarding future activity in specific risk areas including the rates of investment return and payroll growth, eligibility for the various classes of benefits, and longevity among retired lives. These assumptions are adopted by the Board. The assumptions and the methods comply with the requirements of the Governmental Accounting Standards Board. Each actuarial valuation takes into account all prior differences between actual and assumed experience in each risk area and adjusts the contribution rates as needed. Actuarial methods and assumptions were adopted by the Board pursuant to the June 30, 2012 Experience Study. Gabriel, Roeder, Smith & Company has produced the following reports as of June 30, 2015:

Annual Actuarial Valuation Report GASB Nos. 67 and 68 Valuation Report

In order to gain a full understanding of the condition of this plan, these reports should be read in their entirety.

Actuary's Certification Letter

The Retirement Board September 16, 2015 Page 3

To the best of our knowledge, the report is complete and accurate and was made in accordance with standards of practice promulgated by the Actuarial Standards Board. The actuarial assumptions used for the valuation produce results which, individually and in the aggregate, are reasonable.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. Heidi Barry is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The signing actuaries are independent of the plan sponsor.

Based upon the valuation results, it is our opinion that the Missouri Department of Transportation and Highway Patrol Employees' Retirement System continues to operate in accordance with actuarial principles of level percent-of-payroll financing. It is important to the well-being of the System that it continues to receive contributions at the actuarially determined levels. It is also important to continue to monitor both the total funded status and the funded status of the retiree liabilities to ensure that the funding policy is consistent with the expected life span of the respective unfunded obligation.

Respectfully submitted,

Heidi G. Barry, ASA, MAAA

Kenneth G. Alberts

| Valuation Date: | June 30, 2015 |
|--------------------------------|-------------------------------------|
| Actuarial Cost Method: | Entry Age |
| Amortized Method: | Closed, level percent of payroll |
| Remaining Amortization Period: | 16 years (single equivalent period) |
| Asset Valuation Method: | 3-year smoothing |
| Actuarial Assumptions: | |
| Investment Rate of Return: | 7.75% |
| Projected Salary Increase: | 3.50% to 11.00% |
| Cost-of-Living Adjustments: | 2.40% Compound |
| Includes Wage Inflation at: | |

An actuarial valuation is based upon an actuarial cost method, an asset valuation method, and actuarial assumptions. These methods and assumptions are chosen by the Board of Trustees after consultation with the Actuary and other advisors.

The actuarial cost method is called the Entry Age Actuarial Cost Method. This method is consistent with the Board's level percent of payroll funding objective. With this method, the level percent of payroll is determined that will fund a member's retirement benefit over the member's entire working lifetime, from date of hire (Entry Age) to date of exit from the active member population. Differences in the past between assumed and actual experience become part of unfunded actuarial accrued liabilities and are amortized with level percent of payroll contributions. This cost method was first used in the **June 30, 1999** valuation.

The asset valuation method is a three-year smoothed market value method in which assumed investment return is recognized immediately each year and differences between actual and assumed investment return are phased-in over a closed three-year period. This asset valuation method is intended to give recognition to the long term accuracy of market values while filtering out and dampening short term market swings. This method was first used in the **June 30, 1999** valuation.

The actuarial assumptions used in producing the valuation fall into two broad classes: economic assumptions, and demographic assumptions. Economic assumptions refer to long term rates of investment return, wage growth, covered population growth, and inflation. Demographic assumptions refer to retirement rates, turnover rates, disability rates, merit and seniority pay increases, and mortality rates. The current assumptions are based upon a 2007-2012 study of experience of the MPERS. The assumptions are reviewed from time to time to keep them reasonably current with expected experience.

Economic Assumptions

The investment return rate used in making the valuation was 7.75% per year, compounded annually (net after administrative expenses). This rate of return is not the assumed real rate of return. The real rate of return over wage inflation is defined to be the portion of investment return which is more than the wage inflation rate. Considering wage inflation recognition of 3.50%, the 7.75% rate translates to an assumed real rate of return over wage inflation of 4.25%. This rate was first used for the **June 30, 2013** valuation.

Pay increase assumptions for individual active members are shown on the Salary Increase Assumptions table. Part of the assumption for each age is for a merit and/or seniority increase, and the other 3.50% recognizes wage inflation. These rates were first used for the **June 30, 2013** valuation.

Price Inflation is assumed to be 3.00%. This results in a 2.4% annual COLA assumption. It is assumed that the 2.4% COLA will always be paid.

The Active Member Group size is assumed to remain constant at its present level.

The active member payroll all members is assumed to increase 3.50% annually.

Non Economic Assumptions

The mortality table used to measure retired life mortality was the RP-2000 Combined Healthy Mortality Tables projected 16 years and set back 1 year for males and females. Related values are shown on Joint Life Retirement Values table. This table was first used for the **June 30, 2013** valuation. Disabled pension mortality was based on PBGC Disabled Mortality tables. The healthy mortality tables include a margin for mortality improvement. The margin is in the 16-year projection. The disabled mortality tables do not include a margin for mortality improvement.

The probabilities of retirement for members eligible to retire are shown on the Rates of Retirement table. The rates for full retirement were first used in the **June 30, 2013** valuation. The rates for reduced retirement were first used in the **June 30, 2013** valuation. Upon retirement, members are assumed to pick the BackDROP period that when combined with the remaining annuity produces the highest liability.

The probabilities of disability for members eligible to retire are shown on Rates of Disability table. The rates for disability were first used in the **June 30, 2013** valuation.

The probabilities of withdrawal from service, death in service and disability are shown for sample ages on the Probabilities of Separation tables. The death-in-service and disability rates were first used in the **June 30, 2013** valuation. The withdrawal rates were first used in the **June 30, 2013** valuation.

The data about persons now covered and about present assets was furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary. Data was furnished as of May 31 and assumed to be statistically equivalent to June 30.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (MAAA).

Probabilities of Separation From Active Employment Less Than 5 Years of Service

| | MoDOT, Civilian | Patrol and MPERS | Uniformed Patrol | |
|---------|-----------------|------------------|-------------------------|--------|
| Service | Male | Female | Male | Female |
| 0-1 | 30.00% | 20.00% | 10.00% | 10.00% |
| 1-2 | 16.00 | 14.00 | 7.00 | 7.00 |
| 2-3 | 9.00 | 11.00 | 3.25 | 3.25 |
| 3-4 | 7.00 | 9.00 | 3.00 | 3.00 |
| 4-5 | 5.50 | 5.00 | 2.75 | 2.75 |

Probabilities of Separation From Active Employment More Than 5 Years of Service

| | MoDOT, Civilian | Patrol and MPERS | Uniformed Patrol | |
|-----|-----------------|------------------|------------------|--------|
| Age | Male | Female | Male | Female |
| 25 | 5.75% | 5.10% | 2.70% | 2.70% |
| 30 | 5.12 | 5.10 | 2.70 | 2.70 |
| 35 | 4.12 | 4.59 | 1.91 | 1.91 |
| 40 | 3.21 | 3.74 | 1.13 | 1.13 |
| 45 | 2.41 | 2.89 | 0.79 | 0.79 |
| 50 | 1.76 | 2.04 | 0.46 | 0.46 |
| 55 | 1.29 | 1.19 | 0.23 | 0.23 |
| 60 | 1.04 | 0.34 | 0.17 | 0.17 |

Salary Increase Assumptions For an Individual Member

Age Based Salary Scale

| | MoDOT, C | MoDOT, Civilian Patrol and MPERS | | | Uniformed Patrol | | |
|-----|-------------------|---|-----------------------|-------------------|--------------------|-----------------------|--|
| Age | Merit & Seniority | Base (Economic) | Increase Next Year | Merit & Seniority | Base (Economic) | Increase Next Year | |
| 20 | 4.40% | 3.50% | 7.90% | 6.00% | 3.50% | 9.50% | |
| 25 | 3.18 | 3.50 | 6.68 | 4.25 | 3.50 | 7.75 | |
| 30 | 2.59 | 3.50 | 6.09 | 2.48 | 3.50 | 5.98 | |
| 35 | 2.09 | 3.50 | 5.59 | 1.54 | 3.50 | 5.04 | |
| 40 | 1.44 | 3.50 | 4.94 | 1.09 | 3.50 | 4.59 | |
| 45 | 0.68 | 3.50 | 4.18 | 0.71 | 3.50 | 4.21 | |
| 50 | 0.12 | 3.50 | 3.62 | 0.45 | 3.50 | 3.95 | |
| 55 | 0.00 | 3.50 | 3.50 | 0.29 | 3.50 | 3.79 | |
| 60 | 0.00 | 3.50 | 3.50 | 0.23 | 3.50 | 3.73 | |

Service Based Salary Scale

| MoDOT, Civilian Patrol and MPERS | | Uniformed | l Patrol | |
|--|------|--|----------|--|
| % Merit Increases in Salaries Next Year* | | % Merit Increases in Salaries Next Year* | | |
| Service Index | Rate | Service Index | Rate | |
| 1 | 8.0% | 1 | 10.0% | |
| 2 | 7.0% | 2 | 10.0% | |
| 3 | 4.5% | | | |
| 4 | 4.0% | | | |

^{*}For Non-Uniformed members with 4 or less years of service and Uniformed members with 2 or less years of service, the service based table overwrites the age based table above.

Joint Life Retirement Values (7.75% Interest)

| Sample Attained | | Present Value of \$1 Monthly for Life | | Percent Dying Next Year | | Future Life Expectancy (years) | |
|--------------------|----------|--|---------|----------------------------|-------|-----------------------------------|--|
| Ages | Men | Women | Men | Women | Men | Women | |
| 50 | \$147.46 | \$147.37 | .1516% | .1159% | 33.34 | 35.39 | |
| 55 | 142.23 | 142.00 | .2313% | .2064% | 28.61 | 30.63 | |
| 60 | 135.19 | 134.87 | .4593% | .4099% | 24.03 | 26.02 | |
| 65 | 126.18 | 125.80 | .9002% | .7955% | 19.69 | 21.67 | |
| 70 | 115.18 | 114.73 | 1.5803% | 1.3715% | 15.71 | 17.66 | |
| 75 | 101.84 | 101.56 | 2.6618% | 2.2752% | 12.07 | 14.01 | |
| 80 | 86.45 | 86.42 | 4.8531% | 3.7094% | 8.86 | 10.73 | |

The present values shown above are for illustrative purposes only and include a 50% survivor benefit but do not include the value of future post-retirement increases. Males are assumed to be 3 years older than their spouses.

Percent of Eligible Active Members Retiring Next Year (Rates of Retirement)

Closed and Year 2000 Plans

| MoDOT, Civilian Patrol and MPERS | | | | Uniforme | ed Patrol | |
|----------------------------------|--------|-------|--------|----------|-----------|--------|
| | Mal | е | Femo | le | Male | Female |
| Age | Normal | Early | Normal | Early | Norr | nal |
| 50 | 30.00% | 0.00% | 25.00% | 0.00 % | 35.00% | 35.00% |
| 55 | 27.00 | 3.00 | 32.00 | 3.00 | 20.00 | 20.00 |
| 60 | 19.00 | 8.00 | 22.00 | 6.00 | 100.00 | 100.00 |
| 65 | 35.00 | 0.00 | 35.00 | 0.00 | 100.00 | 100.00 |
| 70 | 40.00 | 0.00 | 50.00 | 0.00 | 100.00 | 100.00 |

Year 2000 Plan - 2011 Tier

| MoDOT, Civilian Patrol and MP Normal | | | | rmed Irol |
|---|---------------|------------|-------|--------------|
| Age | Age & Service | Rule of 90 | Early | Normal |
| 55 | 0.00% | 30.00% | 0.00% | 30.00% |
| 60 | 0.00 | 30.00 | 0.00 | 30.00 |
| 65 | 0.00 | 30.00 | 10.00 | 30.00 |
| 70 | 100.00 | 100.00 | 0.00 | 100.00 |

Percent of Members Becoming Disabled at the Indicated Age (Rates of Disability)

| | <u>MoDOT, Civilian</u> | Patrol and MPERS | Uniformed Patrol | | |
|-----|------------------------|------------------|------------------|--------|--|
| Age | Male | Female | Male | Female | |
| 25 | 0.04% | 0.07% | 0.01% | 0.01% | |
| 30 | 0.09 | 0.08 | 0.02 | 0.02 | |
| 35 | 0.13 | 0.13 | 0.02 | 0.02 | |
| 40 | 0.17 | 0.17 | 0.05 | 0.05 | |
| 45 | 0.23 | 0.36 | 0.09 | 0.09 | |
| 50 | 0.33 | 0.55 | 0.19 | 0.19 | |
| 55 | 0.62 | 0.74 | 0.35 | 0.35 | |
| 60 | 1.12 | 0.90 | 0.58 | 0.58 | |

Summary of Funding and Contributions

Schedule of Funding Progress

| Year Ended June 30 | Actuarial Asset Value | Accrued Liability – Entry Age | Unfunded Accrued Liability (UAAL) | Funded Ratio | Actuarial Covered Payroll ⁽¹⁾ | UAAL as a Percentage of Covered Payroll |
|--------------------------|-----------------------------|-------------------------------------|---|-----------------|--|---|
| 2006 | \$1,521,142,953 | \$2,740,437,837 | \$1,219,294,884 | 55.51% | \$341,227,890 | 357.33% |
| 2007(2) | 1,685,807,004 | 2,897,267,409 | 1,211,460,405 | 58.19% | 365,012,472 | 331.90% |
| 2008 | 1,783,902,280 | 3,019,633,781 | 1,235,731,501 | 59.08% | 375,600,448 | 329.00% |
| 2009 | 1,471,496,660 | 3,113,393,645 | 1,641,896,985 | 47.26% | 379,590,273 | 432.54% |
| 2010(2) | 1,375,844,573 | 3,258,866,925 | 1,883,022,352 | 42.22% | 378,063,006 | 498.07% |
| 2011 | 1,427,290,718 | 3,297,589,869 | 1,870,299,151 | 43.28% | 362,654,376 | 515.72% |
| 2012(2) | 1,531,033,613 | 3,306,278,671 | 1,775,245,058 | 46.31% | 341,637,559 | 519.63% |
| 2013(2) | 1,657,402,393 | 3,583,975,559 | 1,926,573,166 | 46.24% | 329,481,506 | 584.73% |
| 2014 | 1,795,264,291 | 3,650,241,741 | 1,854,977,450 | 49.18% | 336,590,797 | 551.11% |
| 2015 | 1,967,001,509 | 3,715,845,651 | 1,748,844,142 | 52.94% | 342,264,593 | 510.96% |

⁽¹⁾ Values are estimated from contribution rate and amount.

See Note 5 of Notes to the Financial Statement in the Financial Section for Funding policy information.

Member and Employer Contribution Rates

| Year | Employer (All Benef | Member Contributions | |
|---------------------|-------------------------|-------------------------|------------|
| Ended | Uniformed | Non-Uniformed | 2011 Tier |
| June 30 | Patrol Group | Group | All Groups |
| 2006 | 44.27% | 30.49% | 4.00% |
| 2007 | 44.28% | 31.10% | 4.00% |
| 2008 | 42.64% | 31.04% | 4.00% |
| 2009 | 40.22% | 30.72% | 4.00% |
| 2010(2) | 39.95% | 31.40% | 4.00% |
| 2011 | 49.53% | 39.46% | 4.00% |
| 2012 ⁽²⁾ | 58.63% | 45.45% | 4.00% |
| 2013 ⁽²⁾ | 55.03% | 50.92% | 4.00% |
| 2014 | 55.23% | 54.25% | 4.00% |
| 2015 | 58.19% | 58.76% | 4.00% |

See Required Supplementary Information, Schedule of Employers' Contributions for more information.

⁽²⁾ New assumptions and/or methods adopted.

Summary of Member Data Included In Valuations

| | | Non-Uniforn | ned | | |
|--------------------------------------|--------------------|-----------------|------------------------|---------------------|-----------------|
| | Civilian Patrol | MoDOT and MPERS | Non-Uniformed Total | Uniformed Patrol | Grand Total |
| | | | 10101 | | 10101 |
| Active Members | | | | | |
| Closed Plan | 381 | 2,082 | 2,463 | 623 | 3,086 |
| Year 2000 Plan (also closed) | 472 | 1,896 | 2,368 | 396 | 2,764 |
| Year 2000 Plan - 2011 Tier (open) | 262 | 1,021 | _1,283 | _225 | 1,508 |
| Total Active Members | 1,115 | 4,999 | 6,114 | 1,244 | 7,358 |
| Total Active Members Prior Year | 1,127 | 5,026 | 6,153 | 1,237 | 7,390 |
| Retiree - Regular Pensioners | | | | | |
| Closed Plan | 465 | 3,596 | 4,061 | 890 | 4,951 |
| Year 2000 Plan (also closed) | 501 | 2,968 | 3,469 | 3 | 3,472 |
| Year 2000 Plan - 2011 Tier (open) | 0 | 0 | 0 | 0 | 0 |
| Total Regular Pensioners | 966 | 6,564 | 7,530 | 893 | 8,423 |
| Self Insured Disability Pensioners | 4 | 52 | 56 | 3 | 59 |
| Fully Insured Disability Pensioners | 12 | 89 | 101 | 5 | 106 |
| Terminated Vested Members | 244 | 1,882 | 2,126 | 162 | 2,288 |
| Total | 2,341 | 13,586 | 15,927 | 2,307 | 18,234 |
| Active Member Valuation Payroll \$44 | ,500,074 | \$207,314,457 | \$251,814,531 | \$82,586,449 | \$334,400,980 |
| Active Member Valuation Payroll | | | | | |
| Prior Year \$43 | ,858,728 | \$211,776,834 | \$255,635,562 | \$76,450,127 | \$332,085,689 |
| Unfunded Actuarial Accrued Liability | N/A | N/A | \$1,307,624,238 | \$441,219,904 | \$1,748,844,142 |

MoDOT and MPERS

Closed Plan

| | Count | ed by C | | Totals | | | | | | |
|-----------------|-------|---------|-------------------------------|---------|-------|----------------------------|-----|-------|-----|----------------------|
| Attained Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. | | Valuation Payroll |
| Under 20 | - | _ | _ | - | - | _ | - | 0 | \$ | 0 |
| 20-24 | - | - | - | - | - | - | - | 0 | | 0 |
| 25-29 | - | - | - | - | - | - | - | 0 | | 0 |
| 30-34 | - | - | - | 3 | - | - | - | 3 | | 134,809 |
| 35-39 | - | - | 3 | 130 | 1 | - | - | 134 | | 5,793,970 |
| 40-44 | - | - | 3 | 207 | 102 | 1 | - | 313 | | 15,577,794 |
| 45-49 | - | 3 | 4 | 168 | 249 | 84 | 8 | 516 | | 25,680,781 |
| 50-54 | - | 1 | 1 | 152 | 156 | 190 | 89 | 589 | | 29,381,382 |
| 55-59 | - | - | 1 | 118 | 116 | 88 | 60 | 383 | | 18,399,608 |
| 60-64 | - | - | - | 43 | 38 | 17 | 27 | 125 | | 5,749,626 |
| 65-69 | - | - | - | 3 | 4 | 4 | 5 | 16 | | 931,942 |
| 70+ | - | - | - | - | 1 | - | 2 | 3 | | 158,659 |
| Totals | 0 | 4 | 12 | 824 | 667 | 384 | 191 | 2,082 | \$1 | 01,808,571 |
| | | | Average Average Average | Service | | 49.9 ye 22.1 ye \$48 | | | | |

Year 2000 Plan

| | Coun | ted by C | omplete Y | ears of Se | ervice to | V aluation | Date | Totals | | | | |
|-----------------|------|----------|-------------------------------|------------|-----------|---------------------------|------|--------|----------------------|--|--|--|
| Attained Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. | Valuation Payroll | | | |
| Under 20 | _ | _ | - | - | - | _ | - | 0 | \$ 0 | | | |
| 20-24 | - | 1 | - | - | _ | _ | _ | 1 | 32,968 | | | |
| 25-29 | 13 | 80 | _ | - | - | - | - | 93 | 3,489,170 | | | |
| 30-34 | 14 | 184 | 96 | - | _ | _ | _ | 294 | 11,804,990 | | | |
| 35-39 | 22 | 131 | 212 | 3 | _ | _ | _ | 368 | 15,260,986 | | | |
| 40-44 | 19 | 115 | 160 | 6 | _ | _ | _ | 300 | 11,789,681 | | | |
| 45-49 | 14 | 113 | 133 | 7 | _ | _ | _ | 267 | 10,033,888 | | | |
| 50-54 | 8 | 98 | 140 | 11 | _ | 1 | _ | 258 | 9,749,278 | | | |
| 55-59 | 12 | 78 | 111 | 7 | 1 | _ | _ | 209 | 7,745,790 | | | |
| 60-64 | 3 | 37 | 51 | 2 | - | - | - | 93 | 3,469,491 | | | |
| 65-69 | 1 | 5 | 5 | - | - | - | - | 11 | 394,074 | | | |
| 70+ | - | 1 | 1 | - | - | - | - | 2 | 65,040 | | | |
| Totals | 106 | 843 | 909 | 36 | 1 | 1 | 0 | 1,896 | \$73,835,356 | | | |
| | | | Average Average Average | Service | | 43.6 ye 9.9 ye \$38 | | | | | | |

MoDOT and MPERS

Year 2000 Plan - 2011 Tier

| | Count | ed by C | omplete Ye | ears of Se | ervice to \ | /aluation | Date | | Totals | | |
|-----------------|-------|---------|-------------------------------|------------|-------------|----------------------------|------|-------|----------------------|--|--|
| Attained Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. | Valuation Payroll | | |
| Under 20 | 3 | - | _ | _ | - | - | _ | 3 | \$ 53,525 | | |
| 20-24 | 148 | - | - | - | - | - | - | 148 | 4,282,075 | | |
| 25-29 | 256 | - | - | - | - | - | - | 256 | 8,501,096 | | |
| 30-34 | 162 | - | - | - | - | - | - | 162 | 5,058,629 | | |
| 35-39 | 122 | - | - | - | - | - | - | 122 | 3,565,084 | | |
| 40-44 | 87 | - | - | - | - | - | - | 87 | 2,702,280 | | |
| 45-49 | 98 | - | - | - | - | - | - | 98 | 2,933,913 | | |
| 50-54 | 73 | - | - | - | - | - | - | 73 | 2,237,563 | | |
| 55-59 | 57 | - | - | - | - | - | - | 57 | 1,791,071 | | |
| 60-64 | 11 | - | - | - | - | - | - | 11 | 406,188 | | |
| 65-69 | 3 | - | - | - | - | - | - | 3 | 110,544 | | |
| 70+ | 1 | - | - | - | - | - | - | 1 | 28,562 | | |
| Totals | 1,021 | 0 | 0 | 0 | 0 | 0 | 0 | 1,021 | \$31,670,530 | | |
| | | | Average Average Average | Service | | 35.4 ye 1.4 ye \$31, | ears | | | | |

Uniformed Patrol

Closed Plan

| | Counted by Complete Years of Service to Valuation Date Totals | | | | | | | | |
|-----------------|--|-----|-------------------------------|---------|-------|------------------------------|-----|-----|----------------------|
| Attained Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. | Valuation Payroll |
| Under 20 | - | - | - | - | - | - | - | 0 | \$ 0 |
| 20-24 | - | - | - | - | - | - | - | 0 | 0 |
| 25-29 | - | - | - | - | - | - | - | 0 | 0 |
| 30-34 | - | - | - | - | - | - | - | 0 | 0 |
| 35-39 | - | - | - | 27 | - | - | - | 27 | 2,004,241 |
| 40-44 | - | - | 2 | 119 | 47 | - | - | 168 | 12,841,028 |
| 45-49 | 1 | - | - | 68 | 124 | 40 | - | 233 | 18,665,616 |
| 50-54 | - | - | - | 15 | 32 | 85 | 20 | 152 | 12,362,144 |
| 55-59 | - | - | - | 3 | 3 | 24 | 12 | 42 | 3,524,695 |
| 60-64 | - | - | - | - | - | - | 1 | 1 | 79,781 |
| 65-69 | - | - | - | - | - | - | - | 0 | 0 |
| 70+ | - | - | - | - | - | - | - | 0 | 0 |
| Totals | 1 | 0 | 2 | 232 | 206 | 149 | 33 | 623 | \$49,477,505 |
| | | | Average Average Average | Service | | 47.2 ye 22.0 ye \$79,4 | ars | | |

Year 2000 Plan

| | Count | ed by Co | mplete Ye | ears of Se | rvice to V | aluation | Date | Totals | | | | |
|-----------------|-------|----------|-------------------------------|------------|------------|----------------------------|------|--------|----------------------|--|--|--|
| Attained Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. | Valuation Payroll | | | |
| Under 20 | - | _ | _ | - | - | - | _ | 0 | \$ O | | | |
| 20-24 | - | - | - | - | - | - | - | 0 | 0 | | | |
| 25-29 | 5 | 52 | - | - | - | - | _ | 57 | 2,977,906 | | | |
| 30-34 | 1 | 95 | 27 | _ | - | _ | - | 123 | 6,871,725 | | | |
| 35-39 | 1 | 26 | 103 | 1 | - | - | _ | 131 | 8,155,229 | | | |
| 40-44 | - | 19 | 44 | 1 | - | - | _ | 64 | 3,786,935 | | | |
| 45-49 | - | 5 | 11 | - | - | - | _ | 16 | 914,833 | | | |
| 50-54 | - | 1 | 3 | - | - | - | _ | 4 | 233,711 | | | |
| 55-59 | - | _ | _ | - | 1 | - | _ | 1 | 69,728 | | | |
| 60-64 | - | _ | _ | - | - | - | _ | 0 | . 0 | | | |
| 65-69 | _ | _ | _ | _ | _ | _ | _ | 0 | 0 | | | |
| 70+ | - | - | - | - | - | - | - | 0 | 0 | | | |
| Totals | 7 | 198 | 188 | 2 | 1 | 0 | 0 | 396 | \$23,010,067 | | | |
| | | | Average Average Average | Service | | 35.3 ye 9.7 ye \$58, | ears | | | | | |

Uniformed Patrol

Year 2000 Plan - 2011 Tier

| | Counte | ed by Co | mplete Ye | ars of Ser | vice to V | aluation | Date | | Totals | | |
|-----------------|--------|----------|-------------------------------|------------|-----------|----------------------------|------|-----|----------------------|--|--|
| Attained Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. | Valuation Payroll | | |
| Under 20 | - | - | - | - | - | - | - | 0 | \$ 0 | | |
| 20-24 | 36 | - | - | - | - | - | - | 36 | 1,475,550 | | |
| 25-29 | 132 | - | - | - | - | - | - | 132 | 6,052,849 | | |
| 30-34 | 35 | - | - | - | - | - | - | 35 | 1,610,681 | | |
| 35-39 | 16 | - | - | - | - | - | - | 16 | 687,636 | | |
| 40-44 | 4 | - | - | - | - | - | - | 4 | 184,447 | | |
| 45-49 | 2 | - | - | - | - | - | - | 2 | 87,714 | | |
| 50-54 | _ | - | - | _ | - | - | - | 0 | 0 | | |
| 55-59 | _ | - | - | _ | - | - | - | 0 | 0 | | |
| 60-64 | _ | - | - | - | - | - | - | 0 | 0 | | |
| 65-69 | _ | - | - | _ | - | - | - | 0 | 0 | | |
| 70+ | - | - | - | - | - | - | - | 0 | 0 | | |
| Totals | 225 | 0 | 0 | 0 | 0 | 0 | 0 | 225 | \$10,098,877 | | |
| | | | Average Average Average | Service | | 28.1 ye 2.4 ye \$44, | ars | | | | |

Civilian Patrol

Closed Plan

| | Counted by Complete Years of Service to Valuation Date Totals | | | | | | | | |
|-----------------|--|-----|-------------------------------|---------|-------|-----------------------------|------|-----|----------------------|
| Attained Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. | Valuation Payroll |
| Under 20 | - | - | - | _ | - | - | - | 0 | \$ 0 |
| 20-24 | - | - | - | - | - | - | - | 0 | 0 |
| 25-29 | - | - | - | - | - | - | - | 0 | 0 |
| 30-34 | - | - | - | - | - | - | - | 0 | 0 |
| 35-39 | - | - | 1 | 20 | 2 | - | - | 23 | 1,023,622 |
| 40-44 | - | - | 1 | 31 | 12 | - | - | 44 | 1,967,565 |
| 45-49 | - | - | 1 | 36 | 29 | 17 | 2 | 85 | 4,055,202 |
| 50-54 | 1 | 1 | 1 | 23 | 36 | 23 | 22 | 107 | 5,016,361 |
| 55-59 | - | - | - | 24 | 17 | 22 | 14 | 77 | 3,482,723 |
| 60-64 | - | - | - | 14 | 7 | 8 | 8 | 37 | 1,702,263 |
| 65-69 | - | - | - | 1 | 4 | 1 | 1 | 7 | 244,209 |
| 70+ | - | - | - | 1 | - | - | - | 1 | 36,678 |
| Totals | 1 | 1 | 4 | 150 | 107 | 71 | 47 | 381 | \$17,528,623 |
| | | | Average Average Average | Service | | 51.1 ye 22.4 ye \$46, | ears | | |

Year 2000 Plan

| | | | | | | | | | Totals |
|-----------------|-----|-----|-------------------------------|---------|-------|-----------------------------|-----|-----|----------------------|
| Attained Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. | Valuation Payroll |
| Under 20 | - | - | - | - | - | - | _ | 0 | \$ 0 |
| 20-24 | _ | _ | - | _ | _ | _ | - | 0 | 0 |
| 25-29 | 6 | 22 | - | _ | _ | _ | - | 28 | 1,142,145 |
| 30-34 | 8 | 59 | 19 | - | _ | - | - | 86 | 3,575,452 |
| 35-39 | 4 | 37 | 44 | _ | _ | - | - | 85 | 3,784,048 |
| 40-44 | 1 | 28 | 29 | 1 | _ | _ | _ | 59 | 2,387,666 |
| 45-49 | 7 | 29 | 28 | 3 | 1 | _ | _ | 68 | 2,669,941 |
| 50-54 | 7 | 24 | 27 | 5 | _ | _ | _ | 63 | 2,436,268 |
| 55-59 | 3 | 21 | 21 | 2 | _ | _ | _ | 47 | 1,716,926 |
| 60-64 | 2 | 9 | 13 | 2 | _ | _ | _ | 26 | 858,581 |
| 65-69 | 1 | 1 | 6 | _ | _ | _ | _ | 8 | 258,034 |
| 70+ | - | 1 | 1 | - | - | - | - | 2 | 59,028 |
| Totals | 39 | 231 | 188 | 13 | 1 | 0 | 0 | 472 | \$18,888,089 |
| | | | Average Average Average | Service | | 43.5 ye 9.3 ye \$40,0 | ars | | |

Civilian Patrol

Year 2000 Plan - 2011 Tier

| | Count | ted by C | Date | | Totals | | | | |
|-----------------|-------|----------|-------------------------------|---------|--------|----------------------------|------|-----|----------------------|
| Attained Age | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. | Valuation Payroll |
| Under 20 | - | - | - | - | - | _ | - | 0 | \$ 0 |
| 20-24 | 23 | - | - | - | - | - | - | 23 | 615,082 |
| 25-29 | 84 | - | - | - | - | - | - | 84 | 2,771,780 |
| 30-34 | 33 | - | - | - | - | - | - | 33 | 1,092,257 |
| 35-39 | 22 | - | _ | - | - | _ | _ | 22 | 648,472 |
| 40-44 | 23 | - | _ | - | - | _ | _ | 23 | 725,262 |
| 45-49 | 28 | _ | _ | _ | _ | - | _ | 28 | 857,330 |
| 50-54 | 18 | - | - | - | - | _ | - | 18 | 510,578 |
| 55-59 | 18 | - | - | - | - | - | - | 18 | 489,678 |
| 60-64 | 11 | - | - | - | - | - | - | 11 | 317,802 |
| 65-69 | 1 | - | - | - | - | - | - | 1 | 25,320 |
| 70+ | 1 | - | - | - | - | - | - | 1 | 29,801 |
| Totals | 262 | 0 | 0 | 0 | 0 | 0 | 0 | 262 | \$8,083,362 |
| | | | Average Average Average | Service | | 37.0 ye 2.0 ye \$30, | ears | | |

Member data for actuarial valuation is as of May 31, 2015.

Schedule of Active Member Valuation Data

| Actuarial Valuation for June 30, | Number of Participating Employers | Number of Active Members | Covered Payroll | Average | Percent Change in Average Pay from Prior Year |
|--|---|--------------------------------|--------------------|-----------------|---|
| 2006 | 3 | 9,033 | \$348,614,699 | \$38,593 | 2.6% |
| 2007 | 3 | 8,640 | 360,842,421 | 41,764 | 8.2% |
| 2008 | 3 | 8,599 | 369,424,653 | 42,961 | 2.9% |
| 2009 | 3 | 8,784 | 377,652,245 | 42,993 | 0.1% |
| 2010 | 3 | 8,457 | 369,911,252 | 43,740 | 1.7% |
| 2011 | 3 | 8,231 | 361,639,001 | 43,936 | 0.4% |
| 2012 | 3 | 7,458 | 329,293,168 | 44,153 | 0.5% |
| 2013 | 3 | 7,319 | 323,205,767 | 44,160 | 0.0% |
| 2014 | 3 | 7,390 | 332,085,689 | 44,937 | 1.8% |
| 2015 | 3 | 7,358 | 334,400,980 | 45,447 | 1.1% |
| | | | | Ten-Year Averag | e 1.9% |

Solvency Test

The MPERS funding objective is to meet long term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the System are level in concept and soundly executed, the System will pay all promised benefits when due – the ultimate test of financial soundness.

A solvency test is one means of checking a system's progress under its funding program. In a solvency test for a non-contributory plan, the plan's present assets (cash and investments) are compared with:

1) The liabilities for future benefits to present retired

lives and 2) The liabilities for service already rendered by members. In a system that has been following the discipline of level percent of payroll financing, the liabilities for future benefits to present retired lives (liability 1) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by members (liability 2) will be partially covered by the remainder of present assets. The larger the funded portion of liability 2, the stronger the condition of the system. The schedule below illustrates the history of liability 2 of the System.

| Valuation Date June 30 | (1) Member Contributions | (2) Retirees and | (3) Active and Inactive | Present Valuation Assets | | Portion of Present Values Covered by Present Assets | | | |
|------------------------------|--------------------------------|------------------------|-------------------------------|--------------------------------|------|---|-----|-------|--|
| | | Beneficiaries | Members | | (1) | (2) | (3) | Total | |
| | | Mi | illions | | | | | | |
| 1999 | 0 | \$1,132 | \$ 921 | \$1,243 | 100% | 100% | 12% | 61% | |
| 2000 | 0 | 1,238 | 951 | 1,423 | 100% | 100% | 19% | 65% | |
| 2001 | 0 | 1,375 | 926 | 1,521 | 100% | 100% | 16% | 66% | |
| 2002* | 0 | 1,470 | 888 | 1,451 | 100% | 99% | 0% | 62% | |
| 2003 | 0 | 1,555 | 863 | 1,364 | 100% | 88% | 0% | 56% | |
| 2004 | 0 | 1,626 | 867 | 1,332 | 100% | 82% | 0% | 53% | |
| 2005 | 0 | 1,669 | 958 | 1,417 | 100% | 85% | 0% | 54% | |
| 2006 | 0 | 1,734 | 1,007 | 1,521 | 100% | 88% | 0% | 56% | |
| 2007 | 0 | 1,810 | 1,087 | 1,686 | 100% | 93% | 0% | 58% | |
| 2008 | 0 | 1,873 | 1,147 | 1,784 | 100% | 95% | 0% | 59% | |
| 2009 | 0 | 1,947 | 1,166 | 1,471 | 100% | 76% | 0% | 47% | |
| 2010* | 0 | 2,034 | 1,225 | 1,376 | 100% | 68% | 0% | 42% | |
| 2011 | 0 | 2,045 | 1,253 | 1,427 | 100% | 70% | 0% | 43% | |
| 2012* | 0 | 2,133 | 1,173 | 1,531 | 100% | 72 % | 0% | 46% | |
| 2013* | 1 | 2,333 | 1,250 | 1,657 | 100% | 71% | 0% | 46% | |
| 2014 | 2 | 2,384 | 1,264 | 1,795 | 100% | 75% | 0% | 49% | |
| 2015 | 3 | 2,444 | 1,269 | 1,967 | 100% | 80% | 0% | 53% | |

^{*} New assumptions and/or methods adopted.

Derivation of Financial Experience

Actual experience will never coincide exactly with assumed experience (except by coincidence). Gains and losses may offset each other over a period of years, but sizeable year-to-year variations from assumed experience are common. Detail on the derivation of the experience gain (loss) is shown below.

| UAAL Beginning of Year (at July 1) Normal Cost Contributions Interest Net Change in LTD Assets | \$1,854,977,450 49,001,406 (205,047,170) 137,713,979 |
|---|---|
| Expected UAAL Before Any Changes Effect of Changes in Assumptions & Methods Effect of Interest Adjustment Expected UAAL After Changes | 1,836,645,665 - - 1,836,645,665 |
| End of Year UAAL (at June 30) | 1,748,844,142 |
| Gain/(Loss) for Year Gain/(Loss) as a percent of actuarial accrued liabilities | \$87,801,523 |
| at start of year (\$3,650.2 million) | 2.4% |

| Valuation Date June 30 | Experience Gain (Loss) as % of Beginning Accrued Liability |
|---------------------------|--|
| 1999 | (7.7)% |
| 2000 | (0.1)% |
| 2001 | (9.3)% |
| 2002 | (4.5)% |
| 2003 | (5.2)% |
| 2004 | (2.9)% |
| 2005 | (1.5)% |
| 2006 | 1.4% |
| 2007 | 1.1% |
| 2008 | (0.2)% |
| 2009 | (12.6)% |
| 2010 | (3.8)% |
| 2011 | 2.2% |
| 2012 | 3.2% |
| 2013 | 2.1% |
| 2014 | 2.1% |
| 2015 | 2.4% |

Schedule of Retirees and Beneficiaries Added and Removed

| | Adde | ed to Rolls | Remove | d from Rolls | Rolls I | End of Year | | % Inc | rease |
|-------------------|--------|----------------------|--------|----------------------|---------|----------------------|---------------------------------|------------------------|-----------------------------------|
| Valuation Date | Number | Annual Allowances | Number | Annual Allowances | Number | Annual Allowances | Average Annual Allowances | in Annual Allowance | in Average Annual Allowance |
| FY2015 | | | | | | | | | |
| Retirees | 406 | \$4,669,565 | 188 | \$2,712,395 | 6,583 | \$183,337,549 | \$27,850 | 2.61% | -0.79% |
| Beneficiaries | 113 | 1,290,336 | 139 | 900,991 | 1,874 | \$32,080,172 | 17,119 | 2.65% | 4.07% |
| Disabilities | 21 | 0 | 30 | 22,387 | 164 | \$903,386 | 5,508 | -3.43% | 1.87% |
| FY2014 | | | | | | | | | |
| Retirees | 307 | \$4,434,888 | 176 | \$2,317,420 | 6,365 | \$178,670,075 | \$28,071 | 3.54% | 1.41% |
| Beneficiaries | 112 | 1,163,441 | 126 | 863,108 | 1,900 | \$31,253,184 | 16,449 | 3.91% | 4.68% |
| Disabilities | 19 | 6,760 | 25 | 19,831 | 173 | \$935,492 | 5,407 | 3.41% | 6.40% |
| FY2013 | | | | | | | | | |
| Retirees | 395 | \$5,001,943 | 174 | \$2,761,791 | 6,234 | \$172,564,478 | \$27,681 | 4.56% | 0.85% |
| Beneficiaries | 130 | 1,349,835 | 96 | 717,434 | 1,914 | \$30,077,515 | 15,714 | 6.79% | 5.00% |
| Disabilities | 27 | 0 | 23 | 6,788 | 179 | \$904,683 | 5,082 | -1.88% | -3.00% |
| FY2012 | | | | | | | | | |
| Retirees | 413 | \$5,988,784 | 171 | \$2,119,116 | 6,013 | \$165,042,751 | \$27,448 | 4.10% | -0.09% |
| Beneficiaries | 130 | 1,206,259 | 105 | 610,931 | 1,880 | \$28,166,374 | 14,966 | 5.20% | 3.69% |
| Disabilities | 34 | 0 | 25 | 16,712 | 175 | \$922,027 | 5,239 | 0.39% | -5.31% |
| FY2011 | | | | | | | | | |
| Retirees | 311 | \$3,955,409 | 146 | \$2,406,006 | 5,771 | \$158,543,113 | \$27,472 | 0.74% | -2.14% |
| Beneficiaries | 102 | 891,718 | 109 | 710,880 | 1,855 | 26,772,995 | 14,433 | -1.17% | -0.79% |
| Disabilities | 38 | 0 | 14 | 10,399 | 166 | 918,403 | 5,533 | 1.69% | -13.00% |
| FY2010 | | | | | | | | | |
| Retirees | 272 | \$3,218,890 | 137 | \$3,252,182 | 5,606 | \$157,380,575 | \$28,074 | 3.29% | 0.80% |
| Beneficiaries | 103 | 930,442 | 104 | 625,292 | 1,862 | 27,089,491 | 14,549 | 5.79% | 5.85% |
| Disabilities | 21 | 0 | 25 | 73,638 | 142 | 903,107 | 6,360 | -40.95% | -39.29% |
| FY2009 | | | | | | | | | |
| Retirees | 292 | \$4,125,644 | 178 | \$2,136,578 | 5,471 | \$152,372,034 | \$27,851 | 4.49% | 2.31% |
| Beneficiaries | 138 | 1,134,755 | 108 | 622,167 | 1,863 | 25,606,266 | 13,745 | 7.80% | 6.07% |
| Disabilities | 19 | 0 | 28 | 71,381 | 146 | 1,529,412 | 10,475 | -11.67% | -6.23% |
| FY2008 | | | | , | | 1,521,112 | , | | |
| Retirees | 331 | \$3,940,198 | 151 | \$1,202,185 | 5,357 | \$145,826,691 | \$27,222 | 4.97% | 1.45% |
| Beneficiaries | 113 | 763,176 | 92 | 437,560 | 1,833 | 23,753,030 | 12,959 | 6.59% | 5.37% |
| Disabilities | 21 | 54,465 | 32 | 57,913 | 155 | 1,731,521 | 11,171 | -22.63% | -17.14% |
| FY2007 | | 2 ., .93 | | 3,,,,, | | .,, 51,521 | . 1,1,7 | 22.0070 | ., |
| Retirees | 310 | \$3,052,533 | 157 | \$1,373,300 | 5,177 | \$138,917,326 | \$26,834 | 4.87% | 1.77% |
| Beneficiaries | 131 | 51,253 | 112 | 617,163 | 1,812 | 22,283,555 | 12,298 | 8.09% | 6.96% |
| Disabilities | 36 | 0 | 24 | 116,307 | 1,512 | 2,237,892 | 13,481 | 38.31% | 28.31% |
| FY2006 | 33 | | 24 | 110,007 | 100 | 2,207,072 | 10,401 | 30.0170 | |
| Retirees | 252 | \$3,005,557 | 166 | \$1,477,199 | 5,024 | \$132,465,613 | \$26,367 | 3.89% | 1.74% |
| Beneficiaries | 106 | 715,154 | 75 | 381,966 | 1,793 | 20,615,839 | 11,498 | 7.09% | 5.24% |
| Disabilities | | | | | • | | | | |
| Disabilities | 22 | 170,138 | 22 | 106,561 | 154 | 1,618,075 | 10,507 | 9.70% | 8.99% |

^{*}New disabilities are covered / paid by the Standard Insurance Co. Data of this chart is as of June 30, 2015.

Summary of Plan Provisions *

Comparison of the Closed Plan, the Year 2000 Plan, and the Year 2000 Plan - 2011 Tier For the Year Ended June 30, 2015

| Plan Provision | Closed Plan | Year 2000 Plan | Year 2000 Plan - 2011 Tier |
|--|--|---|--|
| Membership Eligibility | Members who work in a position normally requiring at least 1,040 hours of work a year. | Members hired for the first time on or after July 1, 2000, in a position normally requiring at least 1,040 hours of work a year. Members who left state employment prior to becoming vested and return to work on or after July 1, 2000, in a position normally requiring at least 1,040 hours of work a year. | Members hired for the first time on or after January 1, 2011, in a position normally requiring at least 1,040 hours of work a year. Members who have never worked for a state agency covered by MPERS or MOSERS prior to January 1, 2011. |
| Normal Retirement Eligibility | Age 65 & active with 4 years of service. Age 65 with 5 years of service. Age 60 with 15 years of service. "Rule of 80"/minimum age 48. | Age 62 with 5 years of service. "Rule of 80"/minimum age 48. | Age 67 with 10 years of service. "Rule of 90"/minimum age 55. |
| | Uniformed Members Only: • Age 55 & active with 4 years of service. • Age 55 with 5 years of service. • "Rule of 80"/minimum age 48. • Age 60 & active – mandatory, no minimum service. | Uniformed Members Only: • "Rule of 80"/minimum age 48. • Age 60 & active - mandatory with 5 years of service. | Uniformed Members Only: • Age 55 & active with 10 years of creditable service. • Age 60 & active - mandatory, no minimum service. |
| Early (Reduced) Retirement Eligibility | Age 55 with 10 years creditable service. | Age 57 with 5 years creditable service. | Age 62 & active with 10 years of creditable service. (active only) |
| Benefit Life Benefit | 1.6% x FAP** x service (Base benefit is increased by 33 1/3% for uniformed patrol members only.) | 1.7% x FAP** x service | 1.7% x FAP** x service |
| Temporary Benefit | Not available. | 0.8% x FAP** x service Until age 62, only if retiring under "Rule of 80". <u>Uniformed Members Only:</u> Until age 62, if retiring under "Rule of 80" or at mandatory age 60. | 0.8% x FAP** x service Until age 62, only if retiring under "Rule of 90". <u>Uniformed Members Only:</u> Until age 62, if retiring under either normal retirement eligibility provision. |
| Vesting | 5 years of service. | 5 years of service. | 10 years of service. |
| COLA (Cost-of-Living Allowance) | If hired before August 28, 1997, annual COLA is a minimum of 4%, maximum 5%, based on 80% of the increase in the CPI-U over the previous year, up to a maximum of 65% of original benefit. After 65% cap is reached, annual COLA increase will be equal to 80% of the change in the CPI-U, with a maximum of 5%. If hired on or after August 28, 1997, annual COLA is equal to 80% of the change in the CPI-U with a maximum rate of 5%. | Annual COLA is equal to 80% of the change in the CPI-U with a maximum rate of 5%. | Annual COLA is equal to 80% of the change in the CPI-U with a maximum rate of 5%. |

Summary of Plan Provisions *

Comparison of the Closed Plan, the Year 2000 Plan, and the Year 2000 Plan - 2011 Tier For the Year Ended June 30, 2015

| Plan Provision | Closed Plan | Year 2000 Plan | Year 2000 Plan - 2011 Tier |
|--|--|--|---|
| Survivor Benefit (Death before retirement) Non Duty- Related Death | Survivor benefit to eligible spouse calculated using the Joint & 100% survivor option or 80% of the member's life income annuity paid to eligible children under age 21. If at least 3, but less than 5, years of service the survivor benefit is calculated using 25% of the member's base benefit calculated as if the member retired on their date of death. | Survivor benefit to eligible spouse calculated using the Joint & 100% survivor option or 80% of the member's life income annuity paid to eligible children under age 21. | Survivor benefit to eligible spouse calculated using the Joint & 100% survivor option or 80% of the member's life income annuity paid to eligible children under age 21. |
| Duty-Related Death | Survivor benefit to eligible spouse or children no less than 50% of final average pay (no minimum service requirement). | Survivor benefit to eligible spouse or children no less than 50% of final average pay (no minimum service requirement). | Survivor benefit to eligible spouse or children no less than 50% of final average pay (no minimum service requirement). |
| Optional Forms of Payment | Payment options include: • Life Income Annuity • Unreduced Joint & 50% Survivor • Joint & 100% Survivor • 60 or 120 Guaranteed Payments • BackDROP | Payment options include: • Life Income Annuity • Joint & 50% Survivor • Joint & 100% Survivor • 120 or 180 Guaranteed Payments • BackDROP | Payment options include: • Life Income Annuity • Joint & 50% Survivor • Joint & 100% Survivor • 120 or 180 Guaranteed Payments |
| Disability | Long-Term Disability and Work- Related Disability | Long-Term Disability and Work- Related Disability | Long-Term Disability and Work- Related Disability |
| Employee Contributions | Non-contributory | Non-contributory | 4% of Gross Pay |

^{*}This summary describes the plan provisions of the Revised Statutes of Missouri (RSMo), as amended, that governed the programs, which MPERS administered during the period covered by this report. It does not overrule any applicable statute or administrative rule and, in the event of a conflict, the applicable statute or rule would apply. The Year 2000 Plan was effective July 1, 2000 and the Year 2000 Plan – 2011 Tier was effective January 1, 2011. A complete summary is available at the MPERS office.

See Note 2 of Notes to the Financial Statements for more information.

^{**}Final Average Pay – average of highest 36 consecutive months of pay.

Legislative Changes

During the 2015 Legislative Session, no MPERS-related bills were signed into law.

Significant Actions by the Board of Trustees

September 2015, marks the 60th Anniversary of MPERS. The last 60 years has lead us on an amazing journey.

MPERS is a traditional defined benefit pension plan providing lifetime retirement benefits to eligible members. The monthly retirement and survivor benefits are a valuable source of retirement income for the members we serve. The average monthly benefit of a new retiree is approximately \$2,000 per month. Given the increasing cost of living, this amount alone will not provide a life of luxury for retirees; however, it may provide a basic foundation for members to retire with dignity.

Since 1955, the Legislature has passed several benefit enhancements, such as cost-of-living adjustments and survivor benefits. A complete History of MPERS can be found on our website (www.mpers.org). We also witnessed the ups and downs of the stock market, most recently the financial crisis that occurred during the "Great Recession" (December 2007 - June 2009).

Through professional plan administration, the Board and MPERS staff have worked diligently to create a strategic plan to aggressively address any funding issues. Obstacles and uncertainty typically lead to opportunities, and MPERS' portfolio has the governance model and structure in place to capitalize on whatever the future holds. The restructuring that started in 2004 has already proved beneficial to the members of the System, as evidenced by the strong performance over the past ten years.

Important Board Events

| September 1, 1955 | Retirement System created through the passage of Senate Bill 66. System's assets invested conservatively through United Missouri Bank (UMB). |
|--------------------|--|
| October 1, 1997 | The Board hired Rothchild Asset Management. This represented the first time MPERS employed an investment manager other than UMB. Started to diversify investment managers by hiring 7 managers over the next 4 years in addition to UMB. |
| October 1, 2001 | Transferred 5 employees from MoDOT payroll to MPERS payroll to operate the System. |
| June 14, 2002 | MPERS purchased its office building at 1913 William Street. |
| February 1, 2003 | Hired Northern Trust as custodial bank. |
| July 1, 2004 | Contracted with Standard Insurance Company for handling the long-term and work-related disability claims. |
| 2005 - 2006 | Portfolio restructured to diversify and take advantage of opportunities in alternative asset classes such as real estate, private equity, and hedge funds. |
| September 28, 2006 | Board adopted a permanent funding policy. (Total contribution based on normal cost plus a 29-year amortization period for unfunded liabilities. The financing period is a closed period starting July 1, 2007.) |
| September 17, 2009 | Board adopted a temporary accelerated funding policy to address the underfunding situation (15-year amortization period for unfunded retiree liabilities and 30-year amortization period for other unfunded liabilities.) |
| June 30, 2010 | Board adopted further revisions to asset allocation to reduce risk in investment portfolio. |
| September 25, 2014 | Board established the Rate Stabilization Reserve Fund to further reinforce funding, and protect against higher contribution rates in the future. |

STATISTICAL SUMMARY

Changes in Net Position

The chart on page 74 details a 10-year history of the additions (revenues) and deductions (expenses) of MPERS

The chart on page 75 details a 10-year history of benefit payments by type.

<u>Plan Membership</u>

Overall, MPERS' membership increased by 229. Retired members and their beneficiaries increased by 183, terminated-vested members increased by 78, and active members decreased by 42.

The charts beginning on page 76 detail the number of retired members by type of benefit and the average monthly benefit payments.

Other charts and graphs in this section detail demographic information concerning our members and employers.

All non-accounting data in this section was derived from internal sources and the annual actuarial valuation reports. Member data may differ between some schedules since the valuations are performed using data as of May 31 each year.

Changes in Net Position

MoDOT and Patrol Employees' Retirement System Changes in Net Position, Last Ten Fiscal Years

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---------------|---|---|-----------------|---------------|--|----------------|---------------|---|-------------------------|
| Additions | | | | | | | | | | |
| Employer Contributions | \$111,271,679 | \$111,271,679 \$121,264,532 \$123,335,151 | \$123,335,151 | \$122,599,301 | \$124,052,534 | \$150,022,169 | \$164,880,140 | \$170,836,117 | \$150,022,169 \$164,880,140 \$170,836,117 \$183,353,841 \$200,638,571 | \$200,638,571 |
| Employee Contributions (1) | 0 | 0 | 0 | 0 | 0 | 45,361 | 202,843 | 503,550 | 1,282,379 | 2,086,000 |
| Transfers from Other Systems (2) | 0 | 0 | 0 | 0 | 0 | 17,609,276 | 264,954 | 1,727,834 | 1,784,382 | 1,114,437 |
| Other Contributions | 271,038 | 529,926 | 1,192,527 | 444,000 | 424,172 | 453,984 | 868'806 | 635,900 | 978,184 | 1,208,162 |
| Net Investment Income | 212,206,238 | 283,549,424 | (42,915,886) | (426,265,311) | 166,307,054 | 279,612,052 | 42,091,564 | 198,139,438 | 319,445,655 | 92,645,423 |
| Other Income | 41,542 | 31,580 | 31,546 | 33,571 | 33,145 | 33,141 | 13,760 | 1,650 | 125 | 148 |
| Total Additions to Fiduciary Net Position | 323,790,497 | 323,790,497 405,375,462 | 81,643,338 | (303,188,439) | 290,816,905 | 447,775,983 | 208,362,159 | 371,844,489 | | 506,844,566 297,692,741 |
| <u>Deductions</u> Benefit Payments | 164,997,406 | 175,970,479 | 185,801,362 | 192,013,250 | 196,721,274 | 202,153,768 | 219,704,320 | 224,518,100 | 231,384,708 | 241,714,876 |
| Administrative Expenses | 1,927,594 | | 2,371,215 | 2,339,501 | 2,512,181 | 2,658,849 | 2,934,969 | 2,997,225 | | |
| Total Deductions from Fiduciary Net Position | 166,925,000 | 178,091,243 | 188,172,577 | 194,352,751 | 199,233,455 | 204,812,617 | 222,639,289 | 227,515,325 | 235,121,063 | 245,781,820 |
| Change in Net Position | \$156,865,497 | \$227,284,219 | \$156,865,497 \$227,284,219 \$(106,529,239) \$(497,541,190) | \$(497,541,190) | \$91,583,450 | \$242,963,366 \$(14,277,130) \$144,329,164 \$271,723,503 | \$(14,277,130) | \$144,329,164 | \$271,723,503 | \$51,910,921 |

⁽¹⁾ Employee contributions began January 1, 2011 for members in the Year 2000 Plan - 2011 Tier.

^{(2) 2004} transfer from MOSERS for Highway Satety employees and 2011 transfer from MOSERS for Water Patrol employees.

Benefit Payments By Type

MoDOT and Patrol Employees' Retirement System Benefit Payments by Type, Last Ten Fiscal Years

| Type of Benefit | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|--|---------------|---------------|---------------|---------------|---------------|---|---------------|---|---|---------------|
| Age and Service Benefits: | | | | | | | | | | |
| Retiree and Survivor Annuity Payments | \$151,647,091 | \$159,145,368 | \$167,654,271 | \$175,588,494 | \$183,103,253 | \$151,647,091 \$159,145,368 \$167,654,271 \$175,588,494 \$183,103,253 \$188,171,369 \$195,964,396 | \$195,964,396 | \$205,617,640 | \$205,617,640 \$212,840,210 \$218,827,986 | \$218,827,986 |
| BackDROP Payments | 9,721,059 | 13,177,432 | 14,631,932 | 12,859,452 | 10,358,181 | 10,792,932 | 18,138,891 | 13,426,923 | 13,438,730 | 16,366,338 |
| Disability Benefits: | | | | | | | | | | |
| Long-Term Disability | 386,026 | 288,908 | 223,501 | 179,239 | 137,624 | 101,875 | 85,240 | 79,964 | 79,184 | 76,061 |
| Work-Related Disability | 747,723 | 703,159 | 728,507 | 692,043 | 664,469 | 648,320 | 668,821 | 691,227 | 774,541 | 716,047 |
| Normal Disability | 244,208 | 220,490 | 207,417 | 186,349 | 163,485 | 167,427 | 166,140 | 138,281 | 121,872 | 108,891 |
| Insured Disability | 1,796,299 | 1,905,122 | 1,835,734 | 1,847,673 | 1,759,262 | 1,696,845 | 1,592,517 | 1,512,685 | 1,531,578 | 1,554,676 |
| Death Benefits | 455,000 | 530,000 | 520,000 | 990,000 | 535,000 | 575,000 | 675,000 | 900299 | 703,571 | 810,000 |
| Service Transfer Payments ⁽²⁾ | 0 | 0 | 0 | 0 | 0 | 0 | 2,410,526 | 2,357,080 | 1,876,336 | 3,147,482 |
| Employee Contribution Refunds (1) | 0 | 0 | 0 | 0 | 0 | 0 | 2,789 | 29,300 | 18,686 | 107,395 |
| Total Benefits | \$164,997,406 | \$175,970,479 | \$185,801,362 | \$192,013,250 | \$196,721,274 | \$164,997,406 \$175,970,479 \$185,801,362 \$192,013,250 \$196,721,274 \$202,153,768 \$219,704,320 | | \$224,518,100 \$231,384,708 \$241,714,876 | \$231,384,708 | \$241,714,876 |

(1) Employee contributions began January 1, 2011 for members in the Year 2000 Plan - 2011 Tier. (2) Reciprocal transfer legislation enacted effective August 28, 2011.

Schedule of Retired Members By Type of Benefit

All Members*

Type of Benefit

| Amount of Monthly Benefit | Retirer Normal | ment Early | Normal | Disability Work-Related | Long-Term | Survivor | Total Recipients |
|------------------------------|-------------------|---------------|--------|-------------------------|-----------|----------|---------------------|
| 1 - 200 | 29 | 82 | 3 | 28 | 77 | 102 | 321 |
| 201 - 400 | 165 | 186 | 3 | 0 | 6 | 183 | 543 |
| 401 - 600 | 169 | 144 | 1 | 0 | 7 | 183 | 504 |
| 601 - 800 | 168 | 96 | 1 | 1 | 1 | 194 | 461 |
| 801 - 1000 | 182 | 53 | 3 | 1 | 1 | 172 | 412 |
| 1001 - 1200 | 255 | 26 | 1 | 2 | 0 | 134 | 418 |
| 1201 - 1400 | 334 | 16 | 0 | 1 | 1 | 138 | 490 |
| 1401 - 1600 | 415 | 8 | 2 | 2 | 0 | 105 | 532 |
| 1601 - 1800 | 397 | 4 | 0 | 4 | 0 | 89 | 494 |
| 1801 - 2000 | 393 | 3 | 0 | 5 | 0 | 81 | 482 |
| 2001 - 2200 | 355 | 2 | 0 | 3 | 0 | 72 | 432 |
| 2201 - 2400 | 309 | 2 | 0 | 4 | 0 | 67 | 382 |
| 2401 - 2600 | 317 | 0 | 0 | 0 | 0 | 46 | 363 |
| 2601 - 2800 | 308 | 1 | 0 | 2 | 0 | 55 | 366 |
| 2801 - 3000 | 283 | 0 | 0 | 1 | 0 | 51 | 335 |
| > 3000 | 1,880 | 1 | 0 | 3 | 0 | 202 | 2,086 |
| TOTALS | 5,959 | 624 | 14 | 57 | 93 | 1,874 | 8,621 |

^{*} This chart includes nine retirement system staff retirees

MoDOT

Type of Benefit

| Amount of | Retire | nent | | Disability | | | Total |
|-----------------|--------|-------|--------|--------------|-----------|----------|------------|
| Monthly Benefit | Normal | Early | Normal | Work-Related | Long-Term | Survivor | Recipients |
| 1 - 200 | 20 | 64 | 3 | 23 | 65 | 94 | 269 |
| 201 - 400 | 120 | 151 | 3 | 0 | 5 | 167 | 446 |
| 401 - 600 | 118 | 121 | 1 | 0 | 5 | 161 | 406 |
| 601 - 800 | 119 | 84 | 1 | 1 | 1 | 171 | 377 |
| 801 - 1000 | 136 | 46 | 3 | 1 | 1 | 151 | 338 |
| 1001 - 1200 | 205 | 22 | 1 | 2 | 0 | 117 | 347 |
| 1201 - 1400 | 288 | 14 | 0 | 1 | 1 | 122 | 426 |
| 1401 - 1600 | 350 | 8 | 2 | 2 | 0 | 78 | 440 |
| 1601 - 1800 | 342 | 4 | 0 | 4 | 0 | 77 | 427 |
| 1801 - 2000 | 335 | 3 | 0 | 5 | 0 | 69 | 412 |
| 2001 - 2200 | 296 | 2 | 0 | 2 | 0 | 58 | 358 |
| 2201 - 2400 | 268 | 2 | 0 | 2 | 0 | 45 | 317 |
| 2401 - 2600 | 267 | 0 | 0 | 0 | 0 | 31 | 298 |
| 2601 - 2800 | 271 | 1 | 0 | 2 | 0 | 32 | 306 |
| 2801 - 3000 | 242 | 0 | 0 | 1 | 0 | 35 | 278 |
| > 3000 | 1,121 | 1 | 0 | 2 | 0 | 155 | 1,279 |
| TOTALS | 4,498 | 523 | 14 | 48 | 78 | 1,563 | 6,724 |

Schedule of Retired Members By Type of Benefit

Uniformed Patrol

Type of Benefit

| Amount of | Retirer | | | Disability | | | Total |
|-----------------|---------|-------|--------|--------------|-----------|----------|------------|
| Monthly Benefit | Normal | Early | Normal | Work-Related | Long-Term | Survivor | Recipients |
| 1 - 200 | 1 | 0 | 0 | 4 | 1 | 1 | 7 |
| 201 - 400 | 3 | 0 | 0 | 0 | 0 | 4 | 7 |
| 401 - 600 | 10 | 0 | 0 | 0 | 0 | 4 | 14 |
| 601 - 800 | 11 | 0 | 0 | 0 | 0 | 3 | 14 |
| 801 - 1000 | 7 | 0 | 0 | 0 | 0 | 9 | 16 |
| 1001 - 1200 | 6 | 0 | 0 | 0 | 0 | 2 | 8 |
| 1201 - 1400 | 3 | 0 | 0 | 0 | 0 | 5 | 8 |
| 1401 - 1600 | 1 | 0 | 0 | 0 | 0 | 14 | 15 |
| 1601 - 1800 | 2 | 0 | 0 | 0 | 0 | 5 | 7 |
| 1801 - 2000 | 4 | 0 | 0 | 0 | 0 | 5 | 9 |
| 2001 - 2200 | 2 | 0 | 0 | 1 | 0 | 11 | 14 |
| 2201 - 2400 | 3 | 0 | 0 | 1 | 0 | 19 | 23 |
| 2401 - 2600 | 4 | 0 | 0 | 0 | 0 | 14 | 18 |
| 2601 - 2800 | 3 | 0 | 0 | 0 | 0 | 22 | 25 |
| 2801 - 3000 | 2 | 0 | 0 | 0 | 0 | 15 | 17 |
| > 3000 | 658 | 0 | 0 | 1 | 0 | 43 | 702 |
| TOTALS | 720 | 0 | 0 | 7 | 1 | 176 | 904 |

Civilian Patrol

Type of Benefit

| Amount of Monthly Benefit | <u>Retirer</u> Normal | nent Early | Normal | Disability Work-Related | Long-Term | Survivor | Total Recipients |
|------------------------------|--------------------------|---------------|--------|----------------------------|-----------|----------|---------------------|
| 1 - 200 | 7 | 18 | 0 | 1 | 11 | 7 | 44 |
| 201 - 400 | 42 | 35 | 0 | 0 | 1 | 12 | 90 |
| 401 - 600 | 41 | 23 | 0 | 0 | 2 | 18 | 84 |
| 601 - 800 | 38 | 12 | 0 | 0 | 0 | 20 | 70 |
| 801 - 1000 | 39 | 7 | 0 | 0 | 0 | 12 | 58 |
| 1001 - 1200 | 44 | 4 | 0 | 0 | 0 | 15 | 63 |
| 1201 - 1400 | 42 | 2 | 0 | 0 | 0 | 11 | 55 |
| 1401 - 1600 | 64 | 0 | 0 | 0 | 0 | 13 | 77 |
| 1601 - 1800 | 53 | 0 | 0 | 0 | 0 | 7 | 60 |
| 1801 - 2000 | 53 | 0 | 0 | 0 | 0 | 7 | 60 |
| 2001 - 2200 | 57 | 0 | 0 | 0 | 0 | 3 | 60 |
| 2201 - 2400 | 38 | 0 | 0 | 1 | 0 | 3 | 42 |
| 2401 - 2600 | 46 | 0 | 0 | 0 | 0 | 1 | 47 |
| 2601 - 2800 | 34 | 0 | 0 | 0 | 0 | 1 | 35 |
| 2801 - 3000 | 39 | 0 | 0 | 0 | 0 | 1 | 40 |
| > 3000 | 95 | 0 | 0 | 0 | 0 | 4 | 99 |
| TOTALS | 732 | 101 | 0 | 2 | 14 | 135 | 984 |

MoDOT

By Years of Service

| Retired Fiscal | | 0 - 10 | 11 - 15 | 16 - 20 | 21 - 25 | 26 - 30 | 31 - 35 | 36 - 40 | 41+ |
|-------------------|-------------------------|---------|---------|---------|---------|---------|---------|---------|-------|
| 2006 | Average Benefit | \$394 | 700 | 1,014 | 1,389 | 2,267 | 2,195 | 2,948 | 3,743 |
| 2006 | Average FAP | \$3,213 | 2,350 | 2,763 | 2,957 | 3,420 | 3,262 | 4,093 | 4,086 |
| 2006 | Current Retirees | 12 | 14 | 15 | 22 | 54 | 29 | 10 | 7 |
| 2007 | Average Benefit | \$295 | 583 | 907 | 1,330 | 2,382 | 2,576 | 2,838 | 3,498 |
| 2007 | Average FAP | \$2,120 | 2,414 | 2,331 | 2,887 | 3,359 | 3,636 | 4,044 | 4,031 |
| 2007 | Current Retirees | 21 | 24 | 18 | 28 | 64 | 36 | 14 | 6 |
| 2008 | Average Benefit | \$287 | 524 | 1,023 | 1,494 | 2,420 | 2,820 | 2,207 | 3,535 |
| 2008 | Average FAP | \$2,262 | 2,402 | 2,991 | 3,392 | 3,435 | 3,917 | 3,513 | 4,463 |
| 2008 | Current Retirees | 27 | 28 | 25 | 35 | 57 | 50 | 18 | 5 |
| 2009 | Average Benefit | \$324 | 672 | 1,070 | 1,626 | 2,404 | 2,717 | 3,059 | 3,594 |
| 2009 | Average FAP | \$2,545 | 2,926 | 3,364 | 3,468 | 3,523 | 3,672 | 3,920 | 4,539 |
| 2009 | Current Retirees | 28 | 17 | 14 | 39 | 42 | 44 | 16 | 5 |
| 2010 | Average Benefit | \$300 | 590 | 1,206 | 1,691 | 2,540 | 2,998 | 2,774 | 3,417 |
| 2010 | Average FAP | \$2,388 | 2,535 | 3,356 | 3,511 | 3,643 | 3,953 | 4,015 | 4,008 |
| 2010 | Current Retirees | 26 | 24 | 16 | 38 | 60 | 41 | 3 | 3 |
| 2011 | Average Benefit | \$327 | 600 | 1,014 | 1,845 | 2,878 | 3,207 | 3,149 | 4,085 |
| 2011 | Average FAP | \$2,663 | 2,659 | 3,135 | 3,577 | 3,939 | 3,932 | 3,863 | 4,167 |
| 2011 | Current Retirees | 21 | 35 | 23 | 43 | 65 | 35 | 6 | 3 |
| 2012 | Average Benefit | \$408 | 520 | 1,049 | 1,712 | 2,939 | 3,333 | 2,657 | 0 |
| 2012 | Average FAP | \$2,945 | 2,769 | 3,432 | 3,509 | 4,226 | 4,272 | 3,785 | 0 |
| 2012 | Current Retirees | 36 | 23 | 39 | 61 | 106 | 56 | 4 | 0 |
| 2013 | Average Benefit | \$294 | 579 | 1,163 | 1,797 | 2,971 | 3,086 | 4,692 | 2,458 |
| 2013 | Average FAP | \$2,627 | 2,932 | 3,538 | 3,814 | 4,341 | 3,982 | 5,516 | 2,802 |
| 2013 | Current Retirees | 34 | 36 | 45 | 68 | 99 | 27 | 2 | 1 |
| 2014 | Average Benefit | \$298 | 638 | 1,135 | 1,936 | 3,081 | 3,551 | 2,396 | 0 |
| 2014 | Average FAP | \$2,449 | 3,032 | 3,416 | 3,851 | 4,508 | 4,606 | 3,781 | 0 |
| 2014 | Current Retirees | 27 | 27 | 22 | 43 | 75 | 14 | 2 | 0 |
| 2015 | Average Benefit | \$311 | 605 | 1,021 | 1,734 | 2,886 | 3,437 | 3,399 | 0 |
| 2015 | Average FAP | \$2,622 | 3,033 | 3,422 | 3,605 | 4,333 | 4,659 | 4,286 | 0 |
| 2015 | Current Retirees | 54 | 60 | 40 | 50 | 79 | 19 | 2 | 0 |

FAP = Final Average Pay

Uniformed Patrol

By Years of Service

| Retired Fiscal | | 0-10 | 11-15 | 16-20 | 21-25 | 26-30 | 31-35 | 36-40 | 41+ |
|-------------------|-------------------------|---------|-------|-------|-------|-------|-------|-------|-------|
| 2006 | Average Benefit | \$0 | 0 | 1,716 | 0 | 4,240 | 5,124 | 5,710 | 0 |
| 2006 | Average FAP | \$0 | 0 | 3,007 | 0 | 4,884 | 5,214 | 5,004 | 0 |
| 2006 | Current Retirees | 0 | 0 | 2 | 0 | 6 | 10 | 1 | 0 |
| 2007 | Average Benefit | \$697 | 884 | 1,168 | 0 | 4,315 | 5,613 | 6,252 | 0 |
| 2007 | Average FAP | \$2,292 | 2,260 | 2,475 | 0 | 5,287 | 5,761 | 5,436 | 0 |
| 2007 | Current Retirees | 1 | 3 | 1 | 0 | 5 | 12 | 4 | 0 |
| 2008 | Average Benefit | \$567 | 0 | 2,173 | 0 | 5,029 | 5,144 | 5,761 | 0 |
| 2008 | Average FAP | \$1,898 | 0 | 3,969 | 0 | 6,098 | 5,253 | 5,575 | 0 |
| 2008 | Current Retirees | 1 | 0 | 1 | 0 | 5 | 10 | 3 | 0 |
| 2009 | Average Benefit | \$0 | 843 | 0 | 2,388 | 4,961 | 5,145 | 5,627 | 7,033 |
| 2009 | Average FAP | \$0 | 2,557 | 0 | 3,711 | 6,140 | 5,832 | 5,565 | 5,974 |
| 2009 | Current Retirees | 0 | 1 | 0 | 2 | 6 | 16 | 6 | 1 |
| 2010 | Average Benefit | \$0 | 1,027 | 1,406 | 0 | 4,587 | 6,199 | 6,664 | 0 |
| 2010 | Average FAP | \$0 | 2,749 | 3,072 | 0 | 5,625 | 6,668 | 7,201 | 0 |
| 2010 | Current Retirees | 0 | 3 | 1 | 0 | 7 | 8 | 2 | 0 |
| 2011 | Average Benefit | \$574 | 1,044 | 0 | 2,617 | 4,604 | 5,837 | 7,060 | 0 |
| 2011 | Average FAP | \$2,245 | 3,051 | 0 | 4,595 | 6,107 | 6,366 | 6,746 | 0 |
| 2011 | Current Retirees | 1 | 2 | 0 | 2 | 9 | 8 | 1 | 0 |
| 2012 | Average Benefit | \$0 | 655 | 0 | 2,899 | 4,479 | 5,642 | 0 | 0 |
| 2012 | Average FAP | \$0 | 2,463 | 0 | 4,521 | 6,012 | 6,439 | 0 | 0 |
| 2012 | Current Retirees | 0 | 1 | 0 | 2 | 9 | 17 | 0 | 0 |
| 2013 | Average Benefit | \$542 | 0 | 1,503 | 3,817 | 4,679 | 5,400 | 7,151 | 0 |
| 2013 | Average FAP | \$2,316 | 0 | 3,917 | 6,507 | 6,473 | 6,505 | 7,510 | 0 |
| 2013 | Current Retirees | 1 | 0 | 2 | 2 | 9 | 8 | 1 | 0 |
| 2014 | Average Benefit | \$423 | 0 | 0 | 3,373 | 4,594 | 5,642 | 6,362 | 0 |
| 2014 | Average FAP | \$2,503 | 0 | 0 | 6,070 | 6,528 | 6,580 | 6,237 | 0 |
| 2014 | Current Retirees | 5 | 0 | 0 | 1 | 24 | 11 | 1 | 0 |
| 2015 | Average Benefit | \$677 | 1,378 | 0 | 3,573 | 4,588 | 5,705 | 0 | 0 |
| 2015 | Average FAP | \$3,119 | 4,458 | 0 | 6,736 | 6,655 | 6,951 | 0 | 0 |
| 2015 | Current Retirees | 1 | 1 | 0 | 2 | 20 | 10 | 0 | 0 |

FAP = Final Average Pay

Civilian Patrol

By Years of Service

| Retired Fiscal | | 0-10 | 11-15 | 16-20 | 21-25 | 26-30 | 31-35 | 36-40 | 41+ |
|-------------------|-------------------------|---------|-------|-------|-------|-------|-------|-------|-------|
| 2006 | Average Benefit | \$186 | 546 | 768 | 1,199 | 2,660 | 2,411 | 2,268 | 0 |
| 2006 | Average FAP | \$2,080 | 2,066 | 2,003 | 2,537 | 3,343 | 3,439 | 3,235 | 0 |
| 2006 | Current Retirees | 4 | 5 | 2 | 11 | 7 | 12 | 2 | 0 |
| 2007 | Average Benefit | \$314 | 551 | 654 | 1,091 | 2,407 | 2,191 | 1,781 | 0 |
| 2007 | Average FAP | \$1,853 | 1,924 | 2,082 | 2,491 | 3,600 | 3,023 | 2,868 | 0 |
| 2007 | Current Retirees | 5 | 5 | 5 | 6 | 8 | 13 | 2 | 0 |
| 2008 | Average Benefit | \$262 | 634 | 900 | 1,200 | 1,665 | 2,689 | 4,119 | 0 |
| 2008 | Average FAP | \$2,186 | 2,736 | 2,551 | 2,658 | 2,753 | 3,796 | 4,151 | 0 |
| 2008 | Current Retirees | 6 | 6 | 7 | 5 | 8 | 11 | 1 | 0 |
| 2009 | Average Benefit | \$227 | 373 | 645 | 0 | 2,603 | 2,474 | 1,843 | 2,487 |
| 2009 | Average FAP | \$2,090 | 1,874 | 2,135 | 0 | 3,690 | 3,369 | 2,865 | 2,679 |
| 2009 | Current Retirees | 4 | 6 | 3 | 0 | 11 | 8 | 3 | 2 |
| 2010 | Average Benefit | \$278 | 466 | 1,122 | 1,241 | 2,897 | 2,365 | 4,519 | 0 |
| 2010 | Average FAP | \$2,285 | 2,124 | 3,091 | 2,654 | 4,106 | 3,188 | 5,179 | 0 |
| 2010 | Current Retirees | 8 | 3 | 5 | 8 | 5 | 3 | 2 | 0 |
| 2011 | Average Benefit | \$323 | 538 | 842 | 1,870 | 2,760 | 2,902 | 0 | 0 |
| 2011 | Average FAP | \$2,526 | 2,343 | 2,469 | 3,495 | 4,034 | 3,843 | 0 | 0 |
| 2011 | Current Retirees | 4 | 8 | 6 | 12 | 14 | 8 | 0 | 0 |
| 2012 | Average Benefit | \$279 | 501 | 1,177 | 1,601 | 2,469 | 2,851 | 0 | 0 |
| 2012 | Average FAP | \$2,133 | 2,289 | 3,501 | 3,115 | 3,690 | 3,458 | 0 | 0 |
| 2012 | Current Retirees | 7 | 6 | 4 | 8 | 16 | 6 | 0 | 0 |
| 2013 | Average Benefit | \$318 | 511 | 952 | 1,698 | 2,380 | 2,836 | 0 | 0 |
| 2013 | Average FAP | \$2,723 | 2,551 | 2,888 | 3,498 | 3,359 | 4,003 | 0 | 0 |
| 2013 | Current Retirees | 13 | 9 | 7 | 10 | 9 | 6 | 0 | 0 |
| 2014 | Average Benefit | \$294 | 544 | 835 | 1,755 | 2,335 | 2,511 | 0 | 0 |
| 2014 | Average FAP | \$2,319 | 2,803 | 2,511 | 3,580 | 3,792 | 3,105 | 0 | 0 |
| 2014 | Current Retirees | 9 | 12 | 7 | 7 | 13 | 3 | 0 | 0 |
| 2015 | Average Benefit | \$292 | 562 | 906 | 1,720 | 2,171 | 3,533 | 0 | 0 |
| 2015 | Average FAP | \$2,342 | 2,568 | 2,981 | 3,504 | 3,716 | 4,911 | 0 | 0 |
| 2015 | Current Retirees | 12 | 12 | 9 | 12 | 14 | 6 | 0 | 0 |

FAP = Final Average Pay

MPERS

By Years of Service

| Retired In Fiscal Year | | 0-10 | 11-15 | 16-20 | 21-25 | 26-30 | 31-35 | 36-40 | 41+ |
|---------------------------|-------------------------|------|-------|-------|-------|-------|--------|-------|-------|
| 2006 | Average Benefit | \$0 | 0 | 0 | 0 | 0 | 3,589 | 0 | 0 |
| 2006 | Average FAP | \$0 | 0 | 0 | 0 | 0 | 4,178 | 0 | 0 |
| 2006 | Current Retirees | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 2007 | Average Benefit | \$0 | 0 | 1,247 | 0 | 0 | 0 | 0 | 0 |
| 2007 | Average FAP | \$0 | 0 | 3,081 | 0 | 0 | 0 | 0 | 0 |
| 2007 | Current Retirees | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 2009 | Average Benefit | \$0 | 0 | 0 | 0 | 0 | 3,040 | 0 | 8,392 |
| 2009 | Average FAP | \$0 | 0 | 0 | 0 | 0 | 5,922 | 0 | 9,989 |
| 2009 | Current Retirees | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 2012 | Average Benefit | \$0 | 0 | 0 | 0 | 4,754 | 0 | 0 | 0 |
| 2012 | Average FAP | \$0 | 0 | 0 | 0 | 7,087 | 0 | 0 | 0 |
| 2012 | Current Retirees | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2013 | Average Benefit | \$0 | 0 | 0 | 0 | 0 | 9,761 | 0 | 0 |
| 2013 | Average FAP | \$0 | 0 | 0 | 0 | 0 | 11,108 | 0 | 0 |
| 2013 | Current Retirees | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 2015 | Average Benefit | \$0 | 0 | 0 | 0 | 0 | 4,231 | 0 | 0 |
| 2015 | Average FAP | \$0 | 0 | 0 | 0 | 0 | 4,764 | 0 | 0 |
| 2015 | Current Retirees | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

Note: There were no retirements during the years not shown above.

FAP = Final Average Pay

Active Member Data

Schedule of Participating Employers

| | MoDC | MoDOT | | Patrol | | S | Total | |
|------|-------------------|-------|------------------|--------|------------------|------|------------------|-----|
| | E mployees | % | Employees | % | Employees | % | Employees | % |
| 2006 | 6,839 | 75.91 | 2,159 | 23.96 | 12 | 0.13 | 9,010 | 100 |
| 2007 | 6,459 | 74.76 | 2,168 | 25.10 | 12 | 0.14 | 8,639 | 100 |
| 2008 | 6,376 | 74.30 | 2,192 | 25.55 | 13 | 0.15 | 8,581 | 100 |
| 2009 | 6,601 | 74.90 | 2,199 | 24.95 | 13 | 0.15 | 8,813 | 100 |
| 2010 | 6,164 | 73.21 | 2,243 | 26.64 | 13 | 0.15 | 8,420 | 100 |
| 2011 | 5,796 | 71.03 | 2,350 | 28.80 | 14 | 0.17 | 8,160 | 100 |
| 2012 | 5,093 | 68.42 | 2,337 | 31.39 | 14 | 0.19 | 7,444 | 100 |
| 2013 | 4,985 | 67.95 | 2,336 | 31.84 | 15 | 0.21 | 7,336 | 100 |
| 2014 | 5,041 | 67.98 | 2,357 | 31.79 | 17 | 0.23 | 7,415 | 100 |
| 2015 | 4,993 | 67.72 | 2,364 | 32.06 | 16 | 0.22 | 7,373 | 100 |

Data for this chart is as of June 30, 2015.

Active Member Data

For the Year Ended June 30, 2015

By Age

Closed Plan

| Age | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|-------------|-------|-------|--------------------|---------------------|-------|
| < 21 | 0 | 0 | 0 | 0 | 0 |
| 21 - 25 | 0 | 0 | 0 | 0 | 0 |
| 26 - 30 | 0 | 0 | 0 | 0 | 0 |
| 36 - 40 | 270 | 183 | 26 | 61 | 0 |
| 41 - 45 | 655 | 387 | 57 | 208 | 3 |
| 46 - 50 | 865 | 556 | 103 | 204 | 2 |
| 51 - 55 | 767 | 541 | 102 | 124 | 0 |
| 56 - 60 | 388 | 297 | 65 | 25 | 1 |
| 61 - 65 | 85 | 64 | 21 | 0 | 0 |
| 66+ | 11 | 8 | 3 | 0 | 0 |
| Total | 3,064 | 2,056 | 379 | 622 | 7 |
| Average Age | | 49 | 50 | 46 | 45 |

Year 2000 Plan

| Age | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|-------------|-------|-------|--------------------|---------------------|-------|
| < 21 | 0 | 0 | 0 | 0 | 0 |
| 21 - 25 | 11 | 7 | 3 | 1 | 0 |
| 26 - 30 | 308 | 160 | 50 | 98 | 0 |
| 31 - 35 | 564 | 341 | 92 | 130 | 1 |
| 36 - 40 | 506 | 330 | 70 | 105 | 1 |
| 41 - 45 | 403 | 289 | 64 | 48 | 2 |
| 46 - 50 | 329 | 246 | 68 | 14 | 1 |
| 51 - 55 | 342 | 278 | 63 | 1 | 0 |
| 56 - 60 | 210 | 173 | 36 | 1 | 0 |
| 61 - 65 | 71 | 53 | 18 | 0 | 0 |
| 66+ | 11 | 4 | 7 | 0 | 0 |
| Total | 2,755 | 1,881 | 471 | 398 | 5 |
| Average Age | | 43 | 43 | 34 | 41 |

| Age | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|-------------|-------|-------|--------------------|---------------------|-------|
| < 21 | 29 | 28 | 1 | 0 | 0 |
| 21 - 25 | 364 | 226 | 51 | 87 | 0 |
| 26 - 30 | 396 | 220 | 74 | 101 | 1 |
| 31 - 35 | 209 | 158 | 27 | 23 | 1 |
| 36 - 40 | 140 | 112 | 19 | 9 | 0 |
| 41 - 45 | 128 | 95 | 27 | 5 | 1 |
| 46 - 50 | 107 | 79 | 27 | 1 | 0 |
| 51 - 55 | 106 | 88 | 17 | 0 | 1 |
| 56 - 60 | 56 | 40 | 16 | 0 | 0 |
| 61 - 65 | 14 | 6 | 8 | 0 | 0 |
| 66+ | 5 | 4 | 1 | 0 | 0 |
| Total | 1,554 | 1,056 | 268 | 226 | 4 |
| Average Age | | 34 | 36 | 27 | 38 |

Active Member Data

For the Year Ended June 30, 2015

By Years of Service

Closed Plan

| Years of Service | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|---------------------|-------|-------|--------------------|---------------------|-------|
| < 01 | 1 | 0 | 1 | 0 | 0 |
| 01 - 05 | 1 | 0 | 0 | 1 | 0 |
| 06 - 10 | 8 | 6 | 1 | 1 | 0 |
| 11 - 15 | 285 | 221 | 33 | 30 | 1 |
| 16 - 20 | 1,183 | 750 | 156 | 274 | 3 |
| 21 - 25 | 901 | 608 | 90 | 201 | 2 |
| 26 - 30 | 509 | 356 | 62 | 90 | 1 |
| 31 - 35 | 130 | 80 | 29 | 21 | 0 |
| 36 - 40 | 37 | 28 | 5 | 4 | 0 |
| 41 - 45 | 9 | 7 | 2 | 0 | 0 |
| 46+ | 0 | 0 | 0 | 0 | 0 |
| Total | 3,064 | 2,056 | 379 | 622 | 7 |
| Average Service | | 22 | 22 | 21 | 20 |

Year 2000 Plan

| Years of Service | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|---------------------|-------|-------|--------------------|---------------------|-------|
| < 01 | 41 | 30 | 11 | 0 | 0 |
| 01 - 05 | 295 | 156 | 87 | 52 | 0 |
| 06 - 10 | 1,351 | 939 | 208 | 200 | 4 |
| 11 - 15 | 1,045 | 741 | 159 | 144 | 1 |
| 16 - 20 | 18 | 12 | 6 | 0 | 0 |
| 21 - 25 | 4 | 3 | 0 | 1 | 0 |
| 26 - 30 | 0 | 0 | 0 | 0 | 0 |
| 31 - 35 | 1 | 0 | 0 | 1 | 0 |
| 36 - 40 | 0 | 0 | 0 | 0 | 0 |
| 41 - 45 | 0 | 0 | 0 | 0 | 0 |
| 46+ | 0 | 0 | 0 | 0 | 0 |
| Total | 2,755 | 1,881 | 471 | 398 | 5 |
| Average Service | | 9 | 9 | 9 | 9 |

| Years of Service | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|---------------------|-------|-------|--------------------|---------------------|-------|
| < 01 | 577 | 474 | 75 | 28 | 0 |
| 01 - 05 | 977 | 582 | 193 | 198 | 4 |
| 06 - 10 | 0 | 0 | 0 | 0 | 0 |
| 11 - 15 | 0 | 0 | 0 | 0 | 0 |
| 16 - 20 | 0 | 0 | 0 | 0 | 0 |
| 21 - 25 | 0 | 0 | 0 | 0 | 0 |
| 26 - 30 | 0 | 0 | 0 | 0 | 0 |
| 31 - 35 | 0 | 0 | 0 | 0 | 0 |
| 36 - 40 | 0 | 0 | 0 | 0 | 0 |
| 41 - 45 | 0 | 0 | 0 | 0 | 0 |
| 46+ | 0 | 0 | 0 | 0 | 0 |
| Total | 1,554 | 1,056 | 268 | 226 | 4 |
| Average Service | | 1 | 1 | 2 | 2 |

Terminated Vested Member Data

For the Year Ended June 30, 2015

By Age

Closed Plan

| Age | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|-------------|-------|-------|--------------------|---------------------|-------|
| < 21 | 0 | 0 | 0 | 0 | 0 |
| 21 - 25 | 0 | 0 | 0 | 0 | 0 |
| 26 - 30 | 0 | 0 | 0 | 0 | 0 |
| 31 - 35 | 18 | 16 | 2 | 0 | 0 |
| 36 - 40 | 122 | 96 | 17 | 8 | 1 |
| 41 - 45 | 343 | 256 | 32 | 55 | 0 |
| 46 - 50 | 411 | 323 | 38 | 50 | 0 |
| 51 - 55 | 447 | 371 | 54 | 22 | 0 |
| 56 - 60 | 191 | 171 | 20 | 0 | 0 |
| 61 - 65 | 30 | 27 | 3 | 0 | 0 |
| 66+ | 2 | 2 | 0 | 0 | 0 |
| Total | 1,564 | 1,262 | 166 | 135 | 1 |
| Average Age | 0 | 49 | 48 | 46 | 38 |

Year 2000 Plan

| Age | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|-------------|-------|-------|--------------------|---------------------|-------|
| < 21 | 0 | 0 | 0 | 0 | 0 |
| 21 - 25 | 0 | 0 | 0 | 0 | 0 |
| 26 - 30 | 49 | 38 | 7 | 4 | 0 |
| 31 - 35 | 163 | 132 | 24 | 6 | 1 |
| 36 - 40 | 181 | 155 | 14 | 12 | 0 |
| 41 - 45 | 136 | 117 | 16 | 3 | 0 |
| 46 - 50 | 90 | 84 | 5 | 1 | 0 |
| 51 - 55 | 79 | 68 | 10 | 1 | 0 |
| 56 - 60 | 32 | 30 | 2 | 0 | 0 |
| 61 - 65 | 5 | 5 | 0 | 0 | 0 |
| 66+ | 1 | 1 | 0 | 0 | 0 |
| Total | 736 | 630 | 78 | 27 | 1 |
| Average Age | 0 | 41 | 39 | 37 | 33 |

| Age | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|-------------|-------|-------|--------------------|---------------------|-------|
| < 21 | 0 | 0 | 0 | 0 | 0 |
| 21 - 25 | 0 | 0 | 0 | 0 | 0 |
| 26 - 30 | 0 | 0 | 0 | 0 | 0 |
| 31 - 35 | 0 | 0 | 0 | 0 | 0 |
| 36 - 40 | 0 | 0 | 0 | 0 | 0 |
| 41 - 45 | 0 | 0 | 0 | 0 | 0 |
| 46 - 50 | 0 | 0 | 0 | 0 | 0 |
| 51 - 55 | 0 | 0 | 0 | 0 | 0 |
| 56 - 60 | 0 | 0 | 0 | 0 | 0 |
| 61 - 65 | 0 | 0 | 0 | 0 | 0 |
| 66+ | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 |
| Average Age | 0 | 0 | 0 | 0 | 0 |

Terminated Vested Member Data

For the Year Ended June 30, 2015

By Years of Service

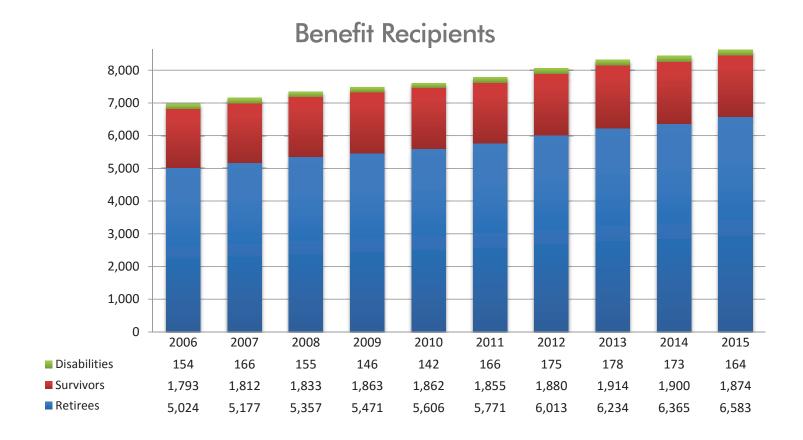
Closed Plan

| Years of Service | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|---------------------|-------|-------|--------------------|---------------------|-------|
| < 01 | 2 | 2 | 0 | 0 | 0 |
| 42009 | 204 | 155 | 25 | 24 | 0 |
| 42165 | 669 | 523 | 69 | 76 | 1 |
| 42323 | 418 | 341 | 49 | 28 | 0 |
| 16 - 20 | 199 | 177 | 15 | 7 | 0 |
| 21 - 25 | 68 | 60 | 8 | 0 | 0 |
| 26 - 30 | 4 | 4 | 0 | 0 | 0 |
| 31 - 35 | 0 | 0 | 0 | 0 | 0 |
| 36 - 40 | 0 | 0 | 0 | 0 | 0 |
| 41 - 45 | 0 | 0 | 0 | 0 | 0 |
| 46+ | 0 | 0 | 0 | 0 | 0 |
| Total | 1,564 | 1,262 | 166 | 135 | 1 |
| Average Service | | 11 | 10 | 9 | 8 |

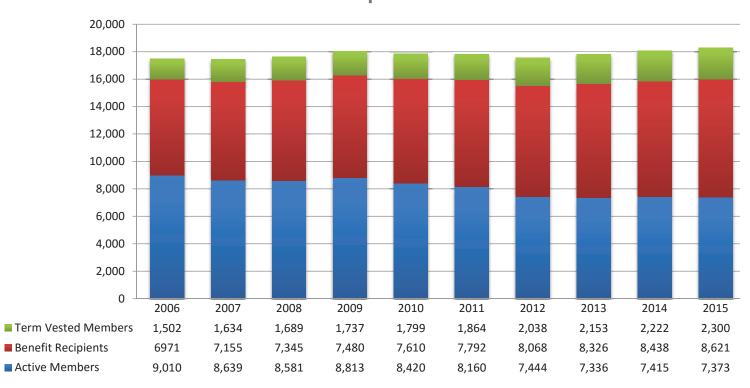
Year 2000 Plan

| Years of Service | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|---------------------|-------|-------|--------------------|---------------------|-------|
| < 01 | 3 | 2 | 1 | 0 | 0 |
| 42009 | 166 | 137 | 24 | 4 | 1 |
| 42165 | 479 | 417 | 43 | 19 | 0 |
| 42323 | 86 | 72 | 10 | 4 | 0 |
| 16 - 20 | 2 | 2 | 0 | 0 | 0 |
| 21 - 25 | 0 | 0 | 0 | 0 | 0 |
| 26 - 30 | 0 | 0 | 0 | 0 | 0 |
| 31 - 35 | 0 | 0 | 0 | 0 | 0 |
| 36 - 40 | 0 | 0 | 0 | 0 | 0 |
| 41 - 45 | 0 | 0 | 0 | 0 | 0 |
| 46+ | 0 | 0 | 0 | 0 | 0 |
| Total | 736 | 630 | 78 | 27 | 1 |
| Average Service | | 8 | 7 | 8 | 5 |

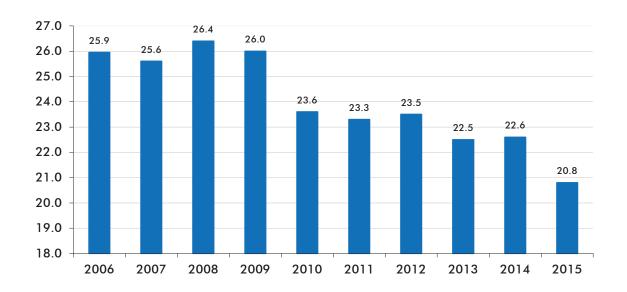
| Years of Service | Total | MoDOT | Civilian Patrol | Uniformed Patrol | MPERS |
|---------------------|-------|-------|--------------------|---------------------|-------|
| < 01 | 0 | 0 | 0 | 0 | 0 |
| 42009 | 0 | 0 | 0 | 0 | 0 |
| 42165 | 0 | 0 | 0 | 0 | 0 |
| 42323 | 0 | 0 | 0 | 0 | 0 |
| 16 - 20 | 0 | 0 | 0 | 0 | 0 |
| 21 - 25 | 0 | 0 | 0 | 0 | 0 |
| 26 - 30 | 0 | 0 | 0 | 0 | 0 |
| 31 - 35 | 0 | 0 | 0 | 0 | 0 |
| 36 - 40 | 0 | 0 | 0 | 0 | 0 |
| 41 - 45 | 0 | 0 | 0 | 0 | 0 |
| 46+ | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 |
| Average Service | | 0 | 0 | 0 | 0 |



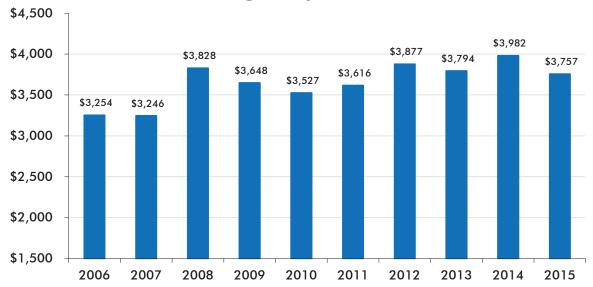
Membership Distribution



Average Years of Service for New Retirees



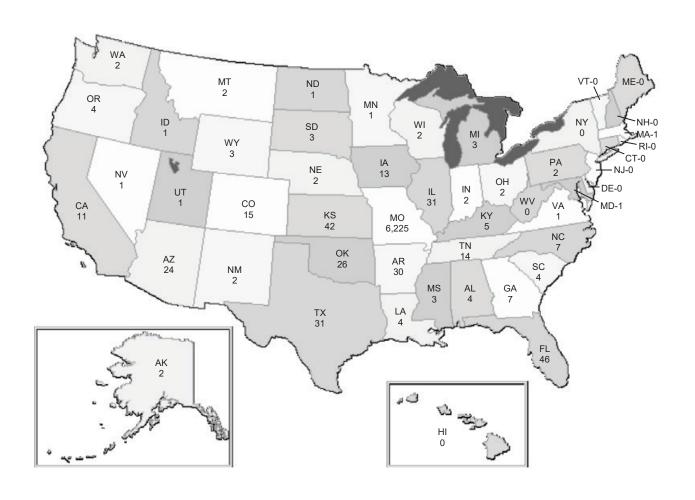
Final Average Pay for New Retirees



Location of MPERS Retirees

For the Year Ended June 30, 2015

This map represents the demographic distribution of retirees by state.



- 1 Retiree resides in England
- 1 Retiree resides in India